



DRUG TODAY

Medical Times



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Breast and oral top among all cancers at NCI-Jhajjar

Rohit Shishodia
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In the past year, the National Cancer Institute (AIIMS), Haryana, has witnessed a surge in detecting breast, oral, and lung cancers, underscoring the urgent need for heightened awareness and prevention measures.

"In the last year, we identified a total of 80,000 cancer cases at NCI, with breast, oral, lung, cervical, colorectal, and gall bladder cancers having the highest incidence," Dr Jitendra Kumar Meena, Assistant Professor, Preventive Oncology, NCI said.

"Unfortunately, the bulk of these cases were found in the advanced third and fourth stages, and up to fifty per cent of them were attributable to tobacco usage," he added.

Speaking to Drug Today Medical Times during an exhibition on departmental achievements at Delhi AIIMS recently, Dr Meena added, "Tobacco consumption can lead to cancers of the mouth, neck, lung, and intestine. A person who is habitual to smoking and using smokeless tobacco can develop these types of cancers. If they stop taking tobacco, the majority of cancers can be prevented. 80% of cancer cases are preventable."

Explaining colorectal cancer, Dr Meena pointed out that it can also happen due to smoking and alcohol consumption.

"A lack of physical activity, fibre-rich meals, fruits and vegetables in one's diet, and insufficient dairy product intake can all contribute to developing colorectal cancer. These variables can cause symptoms such as constipation, diarrhoea, and, in rare cases, blood in the stool. As a result, people who follow these lifestyle habits are more likely to acquire colorectal cancer," Dr Meena said.

"Patients with colorectal cancer present with symptoms such as low abdominal pain, constipation, and weight loss," he added.

On the prevention front, Dr Meena said, "We are actively disseminating the message of early disease intervention to safeguard against its ominous grasp. To achieve this goal, we are working hard to provide specialised training to Haryana government medical officers and community health workers. This concerted effort seeks to empower them with the knowledge and skills necessary to identify cancer cases without delay to our care, ultimately championing the cause of timely medical intervention."

Dr Meena pointed out that the majority of cases of cancer have been reported from Uttar Pradesh, Haryana, Punjab, Rajasthan, and Delhi.

"We are treating 500 patients daily using chemotherapy, radiotherapy, and oncosurgery," he added.

Regarding the diagnostic services offered at NCI, Dr. Meena remarked, "At NCI, we believe in comprehensive cancer care in which specialists, including surgery, preventive care, and radiology, examine the patients and plan them for further treatment. This helps in disease management better."

Dr Meena said, "We do community services and organise community camps adjoining areas of Jhajjar, Gurugram, Delhi, and UP."

"Our facilities include dedicated units for ICU, CCU, palliative care, and pain management for cancer patients. Additionally, we're proud to have India's pioneering fully automated robotic clinical laboratory in the government sector, with a capacity to process up to 60,000 tests daily," he informed.

"We treat all types of cancer, including breast, head, and neck, lung and thoracic, gastrointestinal, hepatopancreaticobiliary, gynaecological, sarcomas, peritoneal, skin, and adnexa, renal, and urological," Dr Meena informed.

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Spice up your heart health: Control Hurry, Curry, and Worry!

If needed to prioritise, doctors should give priority to mental health before attending to physical health issues

Rohit Shishodia

The foreboding spectre of escalating cardiovascular diseases, heart-wrenching incidents of heart attacks, and the untimely death of young souls has become an uncomfortable and pervasive scene in our modern times.

These ailments, which were long reserved for those reaching their sixth decade of life, have now infiltrated people in their fourth decade of life. This unsettling shift has cast a pall over the medical community, as the heartbreaking sight of vibrant young men succumbing to these ravages of the heart not only causes profound sorrow within families but also creates a palpable void in the tapestry of our society and the collective fabric of our nation.

Speaking exclusively to Drug Today Medical Times on the eve of World Heart Day, Dr Anand Kumar Pandey, Senior Consultant of Cardiology at Kailash Deepak Memorial Hospital, Delhi, said that multiple factors trigger heart diseases.

Undue hurry hurts health

Pointing out that mental health is one of them, Dr Pandey said, "You must have noticed that today people are always in a hurry. Often, they get up in the morning very early, even if they do not need to. Similarly, they always desire to reach their destinations before time while travelling, resulting in rash driving that endan-

gers their lives as well as those of others."

Spicy food a big NO!

Explaining that eating curry means consuming food laden with trans fats. Dr Pandey said that according to recent data, people in cities, particularly those in the middle and upper-middle classes, as well as those in higher-income categories, rarely cook their dinners. They instead rely on food delivery services.

"It is not my intention to criticise them, but it is worth noting that we may not always know how long the food has been stored or the quality of the components used in these meals. Many of these foods include trans fats, which can be harmful," he added.

Worrying hurts heart

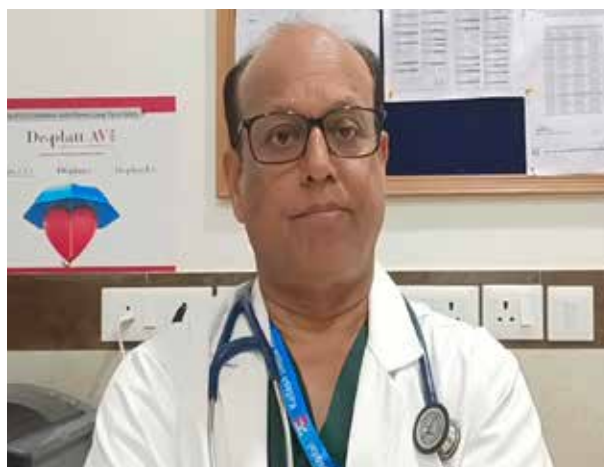
"When I say worry, what I mean is that people are living in a state of continuous anxiety. I do not know what they want to achieve in their lives. So if we combine them, these trigger diabetes and high blood pressure," he explained.

Mental & physical health are intertwined

Stressing that mental and physical health are interlinked, Dr Pandey stated that poor mental health often leads to poor physical health, and this is true in other ways as well.

"You cannot separate them, as the mind cannot be separated from the body," he added.

"What I mean to say is that there should be



Dr Anand Kumar Pandey, Sr. Consultant, Cardiology, Kailash Deepak Hospital Delhi

holistic care. Mind, body, and soul should be treated simultaneously. If blood pressure remains uncontrolled, it will lead to anxiety, stress, and frustration," Dr Pandey emphasised.

"I frequently meet patients who, like heroic soldiers, understand they have a medical ailment but remain hopeful and prepared to fight it head-on. They have a strong determination to control their sickness and do not allow it to consume them," Dr Pandey said.

"On the other hand, there are people who have recently been diagnosed with diabetes and are concerned about the potential impact on their kidneys and other organs. This emphasises the importance of mental health in both disease prevention and recovery," he pointed out.

Emphasising that people often miss the concept of mental health, he cited the example of his patients generally asking queries regarding the sudden deaths of celebrities.

"Appearances may deceive; even seemingly fit celebrities can experience

sudden tragedy. It is a reminder that true health encompasses physical, mental, and social well-being," he added.

Pointing out that psychiatrists are treating patients with mental illness ten times more than they used to treat earlier, Dr Pandey added, "What I want to convey is that a person who looks physically healthy may not have good mental health. This could be the case for celebrities. Not many people know how celebrities are coping with their stress or pressure. They have a continuous struggle with the environment, with their people, and to keep the space they have for a long time. They have to perform as per the expectations of society. All these things are affecting their health."

Yoga can be a great stress buster

"One might take note of the fact that each passing day is rarely without its share of problems, yet it is within our control to select how we traverse this maze of tension. We

can use the ancient disciplines of yoga and meditation, as well as a variety of other activities, to calm the turbulent currents of our minds. The pursuit of activities that stoke the flames of our inner delight is, indeed, vital, Dr Pandey said.

Pointing out that mental well-being is a thread that must be sewn into the magnificent tapestry of our lives from the beginning, he added, "Sowing the seeds of mental health awareness in the fertile minds of kids is a preventative measure against the insidious encroachment of disease that would otherwise besiege them in adulthood."

10 Crore in urban Indians hypertensive

Revealing that around 20% of hypertensive people are living in urban India, he added, "If you translate this number, it would be somewhere near 280 million people, which is a huge number. Similarly, it is estimated that 10% of Indians are diabetics, and around 12% of people have heart diseases."

"Given that these conditions are antecedents to both strokes and heart attacks, it is my firm view that teaching children about the value of well-being and health should begin throughout their formative school years," he emphasised.

Healthy lifestyle a must for healthy heart

"One of them is lifestyle. The most important thing is how you are living your daily life, which determines your health," he

pointed out. "It has been noted that inadequate sleep, lack of physical activities, not taking meals and breakfast at the right time, and inadequate water intake Apart from that, prolonged sitting is a disease itself.

"Good-quality food is a must for good cardiac health," he pointed out.

It is startling to realise how many young individuals are affected by heart disease today. According to reports, heart problems are appearing at a considerably younger age, with some people getting heart attacks and even losing their lives as early as their thirties. This is a significant change from the past when cardiac problems were typically associated with those beyond the age of seventy.

"In India, I have noticed a heartbreaking paradox: while some people die of starvation and the ravages of deprivation, others suffer a different but equally deadly fate. The range of health problems here ranges from hunger to overnutrition, with each taking its toll on life. Unfortunately, children are facing the brunt of this schism. On the one hand, their young lives are cut short owing to a lack of nutrition, a basic necessity that eludes them even if it is fully within the reach of the more affluent class," Dr Pandey said.

"On the other side, a substantial section of our youth is dealing with the consequences of over-indulgence, such as the burden of lifestyle diseases including obesity, diabetes, hypertension, and lipid disorders. These

are our generation's silent epidemics, fueled by an alarming lack of physical exercise and a sedentary lifestyle that adds to their spread. The sad reality is that many people in our culture now spend their lifestyles with little physical activity, compounding the health challenges we face," he added.

Talking about a sedentary life, Dr Pandey said that people go to their offices by car, keep sitting on chairs, and keep engaging themselves on electronic gadgets such as mobile phones and computers. So, physical activities are zero. Hence, a structured life is very crucial.

"Adequate water intake, a quality diet, and proper sleep are essential," he stressed.

"Our declining levels of physical activity are at the basis of this problem. Our need to engage in physical activities has drastically decreased since the introduction of contemporary conveniences such as smartphones and remote controls," Dr Pandey said.

Reminiscing about his younger days, Dr Pandey added, "I remember when we had landline phones at home; you had to walk to answer a call, and even turning on the television required some physical effort."

Pointing out that people's lives, however, have grown increasingly mechanised, he said, "It is now increasingly forecasted that in the near future, even simple tasks like opening gates and turning on room lights will be managed by remote gadgets. So, where does it

leave us in terms of exercise?"

Explaining the rise in obesity in India Dr Pandey said that another significant factor contributing to the issue is the shift in dietary habits. People nowadays tend to rush through breakfast while in work mode, and lunch is often consumed while they continue to work. In the evenings, it is common to indulge in a heavy dinner when it should ideally be a lighter meal. Dinner is often accompanied by television, and shortly thereafter, individuals head to bed. This pattern disrupts the body's ability to effectively digest the food consumed at night, leading to weight gain and obesity.

In the working-class neighbourhood, one can find dinner options laden with unhealthy fats, including trans fats, as popular choices often include pasta, pizza, burgers, and non-vegetarian dishes of uncertain storage duration. These culinary selections raise concerns about their impact on overall health.

All is not lost!

However, all is not lost. Dr Pandey concluded, adding that when one focuses on maintaining a structured and high-quality life, as well as nurturing good mental health, opting for low-fat dairy products, ensuring six to eight hours of sleep, maintaining a regular work routine, consuming two to three litres of water daily, and cultivating a vibrant social life, their overall quality of life can be greatly improved.

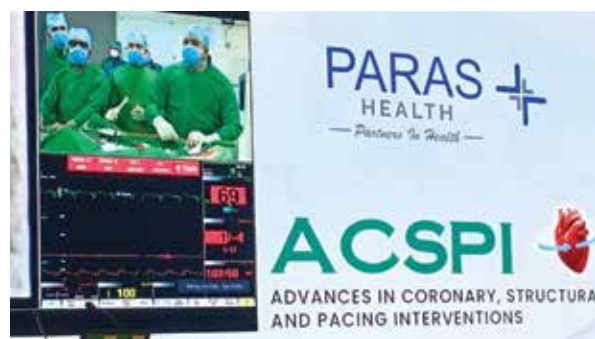
Gurugram: Doctors across globe brainstorm over latest advances in cardiovascular treatment

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Gurugram based Paras Health has recently organised a two-day mega conference, CSAPI 2, on cutting-edge treatment techniques to manage cardiovascular diseases at the city's Westin Hotel.

The conference also featured live surgical demonstrations, showcasing the MICRA, the world's tiniest pacemaker, as well as new devices such as LAO for cardiac protection. Additionally, discussions highlighted the importance of treatments like IVL, ROTA Pro and orbital atherectomy in contemporary cardiac medical procedures.

Speaking to Drug Today Medical Times, Dr. Amit Bhushan Sharma, Director and Unit Head of the Cardiology Department at Paras Health Gurugram, said, "This is our advance conference in which we will discuss the latest techniques to manage cardiovascular



Live demonstration of an advanced cardiac procedure in progress at ACSPI

disease. We will discuss valve replacement without open heart surgery. It is also known as TAVR (transcatheter aortic valve replacement). The other technique we are discussing is Mitraclip, which is the latest technique to manage heart failure."

"We will also share knowledge on the Micra pacemaker, which is the world's smallest pacemaker. It is a single-chamber pacemaker that is about the size of a vitamin and can be implanted directly into the heart, eliminating the need for the leads to also be implanted. We will also share about the

technique of IVL for heart disease," he added.

This event is serving as a platform for leading specialists, medical professionals, and innovators from India and around the world to explore cutting-edge technologies and treatments in the field of cardiology.

When it comes to heart attack-related mortality, India suffers a disproportionate share of the burden, accounting for roughly 20% of the 17.9 million global fatalities, according to the World Health Organisation (WHO). A recent research by the World Heart Federation indicates

a startling 60% increase in worldwide deaths caused by cardiovascular diseases (CVDs), which are the leading cause of death worldwide.

Paras Health took the initiative to organise a critical conference to confront this serious situation and work towards a solution. This event is a proactive move towards addressing the rising number of CVD-related deaths and raising heart health awareness.

The doctors presented an extensive explanation of new methodologies, devices, and emerging technologies that are revolutionizing the ease and effectiveness of cardiac treatments.

Distinguished medical experts, from various regions across India and abroad, delved into the latest technological breakthroughs and their pivotal roles in modern cardiology treatments and devices.

Speaking about the conference, Dr. Amit Bhushan Sharma, Direc-

tor and Unit Head of the Cardiology Department, stressed that with the rapid evolution of technology in all domains of medical science, cardiology has been at the forefront of continuously enhancing its capabilities to confront the mounting cases of coronary heart diseases.

He pointed out that unhealthy lifestyles, poor dietary choices, and habits such as smoking and drinking have fueled the surge in coronary cardiac cases. The conference served as an illuminating platform to showcase the latest technological advancements and underscore their pivotal role in modern cardiology treatments.

"As we witness the persistent rise in coronary heart diseases, embracing cutting-edge technology becomes imperative. It is through this technological transformation that we can effectively address the escalating prevalence of these cardiac conditions," Dr Sharma said.

"BP in teens tied to future heart health"

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In a major development, a recent study has shed light on the connection between blood pressure during teenage years and the likelihood of experiencing cardiovascular events later in life.

Utilising the 2017 American College of Cardiology and American Heart Association guidelines to categorise blood pressure levels in male individuals during their late adolescence, specifically those conscripted into the military between 1969 and 1997, researchers recorded participants' baseline blood pressure at the outset of their military service.

According to them, the primary outcome under investigation encompassed a composite of cardiovascular-related deaths and initial hospitalisations for conditions such as heart attacks, heart failure, ischemic stroke, and intracerebral haemorrhage.

A large cohort of 1,366,519 male participants, with an average age of 18.3 years at the time

of baseline measurements, participated in the study.

According to the findings of the study, the data showed that nearly 29% of participants had elevated blood pressure, falling between 120 to 129 systolic and under 80 diastolic mm Hg, while 54% had hypertensive blood pressure, with systolic levels at or

unveiled adjusted hazard ratios indicative of heightened risk associated with elevated blood pressure levels. The researchers noted that an elevated blood pressure of 120/80 mm Hg or higher in late teen correlated with a gradual increase in the risk of major cardiovascular events in the future.

Risk of R cardiac events increased from 14.7% in normal blood pressure during teenage years to 24.3% in those with stage 2 systolic-diastolic hypertension at 68 years.

The cumulative risk of such events exhibited an upward trajectory, ranging from 14.7% for those with normal blood pressure to 24.3% for individuals with stage 2 systolic-diastolic hypertension at the age of 68, the researchers noted.

This study, focused on Swedish men, was observational. Funding from the Västerbotten County Council, the Swedish Society for Medical Research, and the Heart Foundation of Northern Sweden made this research possible.

The study emphasises the importance of monitoring blood pressure levels in late adolescence as an early indicator of future cardiovascular health, influencing preventive strategies and healthcare interventions.

above 130, or diastolic levels reaching 80 mm Hg or higher. During a median follow-up period of 35.9 years, 79,644 individuals encountered the primary outcome of interest.

The study's findings

"Intra-Arterial Chemo saving 65% of kids' eyes from retinoblastoma"

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Eyes of 65% of children living with retinoblastoma can be saved through intra-arterial chemotherapy, also known as targeted form of chemotherapy, Prof Bhavna Chawla, Department of Ophthalmology, Rajendra Prasad Center, All India Institute of Medical Sciences, Delhi said.



Prof Bhavna Chawla, Department of Ophthalmology AIIMS, New Delhi

Most children with retinoblastoma are between the ages of one and three. He emphasised the need for greater awareness of retinoblastoma. Treatment options include intra-arterial chemotherapy.

"Whitish marks near pupils can be a sign of retinoblastoma and it can also be detected through screening. This condition is also known as leukocoria is an abnormal pupillary reflex more clearly seen after mydriasis or photography," Dr Gaikwad explained.

According to Prof. Bhavna Chawla, India reports the most retinoblastoma instances worldwide. In India, there are thought to be 2,000 new cases of retinoblastoma diagnosed each year.

Retinoblastoma can affect one or both eyes, according to Dr. Shailesh B. Gaikwad, an interventional neuro-radiologist.

hereditary basis, she said. "The second child should be checked for retinoblastoma if there is a family history of the lethal disease and even if one child in the family has already been diagnosed," the renowned ophthalmologist pointed out.

A 2020 study published in Journal of family medicine & Primary Care, researchers pointed out that retinoblastoma is a common eye cancer in children, but in India, many cases are detected late, making it harder to treat successfully.

Researchers said that they wanted to understand more about retinoblastoma in northern India, looking at who it affects, how it is diagnosed, and treated.

Examining data from retinoblastoma patients treated at a northern Indian hospital between 2009 and 2018, the researchers

looked at patient demographics, how the disease was diagnosed, and what treatments were used. They used statistical tests to identify significant differences in the data.

The study included 25 patients, with one excluded as it was an adult case. The average age at diagnosis was 3 years, with slightly more girls than boys. About 16.6% of cases were in both eyes. Most patients (66.6%) had brain and orbit scans as part of their diagnosis.

The study found that nearly 58.3% had eye-related disease, while 41.6% had more advanced disease outside the eyes. Surprisingly only 8.3% of patients had treatment to save their vision, while 87.5% needed their eyes removed. Chemotherapy, using vincristine, etoposide, and carboplatin, was commonly used, both before and after other treatments.

Even though there are treatments to save eyes, many retinoblastoma cases in northern India are diagnosed too late, the researchers observed.

They said that to improve early diagnosis and care, it's crucial to raise awareness about the disease and its symptoms, especially among healthcare providers in local communities.

"This could help more children get the right treatment early and meet Vision 2020 goals," they concluded.

According to the study, the researchers found that 83.3% of the cases affected one eye. The kids in the study were usually around 3 years old when they came for treatment. Normally, 90% of cases are found before kids turn 5, and in the study, it was 83.3%, so that's quite similar.

This type of cancer doesn't seem to favor boys or girls more; it affects them about the same. The researchers said that in their study, they had slightly more girls than boys, but it difference was not significant.

The most common way this cancer shows up is with something called "leukocoria," which means the eye looks white instead of its usual color when you look at it. Sometimes, kids might have a turned eye. Leukocoria is often one of the first signs. It's crucial for healthcare workers to recognize this white eye reflex, especially in kids under five. If they see it, they should send the child to an eye doctor right away. Nowadays, with smartphones and telemedicine, even health workers in remote areas can take a photo of the child's eye and get advice from a doctor.

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98% COVID vaccines were given free: Prof. VK Paul

Radhika Mishra
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During his Diamond Jubilee Oration on the 68th Foundation Day of Delhi-AIIMS, Professor VK Paul, a Member of NITI Aayog, revealed that an impressive 98% of India's COVID vaccine rollout has been carried out at no cost through the country's public healthcare system.

Lauding the country's mammoth COVID-19 vaccination strategy, including administration, logistics, communication strategy, and roll-out, Prof. Paul said, "India's journey in tackling the COVID-19 pandemic has been a testa-



Prof VK Paul
Member, NITI Aayog

ment to our resilience and scientific prowess. AIIMS New Delhi has played a pivotal role in this journey." Union Health Minister Dr Mansukh Mandaviya said that over the past 68 years, AIIMS has lived up to its reputation as the premier healthcare institution in the country.

Speaking at the 68th Foundation Day celebrations, Prof. Baghel expressed happiness that, for the sixth consecutive year, AIIMS New Delhi has been ranked as number one among medical institutions as per the National Institute Ranking Framework (NIRF) issued by the Ministry of Education, Government of India.

He stated that AIIMS has already become a brand today, with its reputation spread across the country. He encouraged the AIIMS officials to maintain this image and take the brand of AIIMS to greater heights.

AI tools can combat vaccine safety myths on social media, say experts

ChatGPT constructs a narrative in line with the available scientific evidence, debunking myths circulating on social media

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Using artificial intelligence tools, including Chat GPT, can help public health experts combat antisocial and increase vaccine uptake by people, the authors of a new study published in the peer-reviewed journal Human Vaccines and Immunotherapeutics said.

Researchers used an AI chatbot to answer the top 50 COVID-19 vaccination queries, revealing misconceptions and false stories for their study. They found that ChatGPT achieved an average accuracy rating of nine out of ten, with gaps in information present, thereby highlighting the need for

further research and improved communication to address these misconceptions.

Based on these findings, experts from the GenPoB research group at the Instituto de Investigación Sanitaria (IDIS) Hospital Clinico Universitario de Santiago de Compostela said the AI tool is a "reliable source of non-technical information for the public," particularly for those lacking specialist scientific knowledge.

However, the findings raise issues regarding the technology, such as ChatGPT modifying its responses in specific scenarios, researchers said.

"Overall, ChatGPT constructs a narrative in

line with the available scientific evidence, debunking myths circulating on social media," says lead author Antonio Salas, who, as well as leading the GenPoB research group, is also a Professor at the Faculty of Medicine at the University of Santiago de Compostela, in Spain, a WHO-designated vaccine safety collaborating centre.

Pointing out that ChatGPT can detect fake vaccines and vaccination-related questions, he added, "Thereby, it potentially facilitates an increase in vaccine uptake. The language this AI uses is not too technical and therefore easily understandable to the public, but without losing scientific rigour."

Acknowledging that the present-day version of ChatGPT cannot substitute expert or scientific evidence, Prof. Salas said, "But the results suggest it could be a reliable source of information for the public."

It should be noted that the World Health Organisation (WHO) named vaccine hesitancy as one of the top ten global health challenges in 2019 and that during the pandemic, misinformation circulated via social media, fueling substantial public suspicion of COVID-19 immunisation.

Researchers at the centre are investigating myths about vaccination safety and medical circumstances that contrib-

ute to vaccine hesitancy. They wanted to see how well ChatGPT, a user-friendly system, communicated COVID-19 immunisation safety information. ChatGPT allows users to connect with a virtual assistant in human-like discussions, making it accessible to a large population. However, governments are concerned about the possibility of fraudulent use in educational environments like universities.

The questions were categorised into safety myths, bogus contraindications, and true contraindications. Safety myths included that immunisation causes long-term COVID, while bogus contraindications included medical

situations like breastfeeding women. True contraindications were health conditions where vaccination should not be used and circumstances where doctors must take measures. The comments were analysed and graded against current scientific evidence and guidelines from WHO and other international bodies.

The authors emphasise the importance of using algorithms from social media and internet search engines to avoid biased or wrong answers. Most questions were answered correctly, with an average score of nine out of 10. ChatGPT provided accurate answers to three question themes, with an average accuracy of

85.5% or 14.5%. However, there were gaps in the information provided by ChatGPT. This is crucial as it helps identify vaccine myths and false or true contraindications in clinical recommendation guidelines.

Interestingly, the researchers also highlighted ChatGPT's downsides in providing vaccine information.

Professor Salas, who specialises in human genetics, concludes: "Chat GPT provides different answers if the question is repeated 'with a few seconds of delay'."

"Another concern we have seen is that this AI tool, in its present version, could also be trained to provide answers not in

line with scientific evidence," he added.

"One can 'torture' the system in such a way that it will provide the desired answer. This is also true for other contexts other than vaccines. For instance, it might be possible to make the chatbot align with absurd narratives like the flat-earth theory, deny climate change, or object to the theory of evolution," he further added.

"However, it is important to note that these responses are not the default behaviour of ChatGPT. Thus, the results we have obtained regarding vaccine safety can probably be extrapolated to many other myths and pseudo-sciences," he concluded.

Kolkata doctors save cervical cancer survivor facing post radiotherapy complications

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A team of doctors at a Kolkata hospital has saved the life of an elderly woman from Mizoram who came to them with complaints of profuse rectal bleeding after a 5-hour laparoscopic surgery.

The team, comprising gastrointestinal oncologist Dr Sanjoy Mandal, gastroenterologist Dr Sudipta Ghosh, gynecologic oncologist Dr Subhadeep Chakraborty, anaesthetist Dr Bharati Roy, and medical oncologist Dr Prosenjit Chatterjee, performed the marathon surgery on the

patient to remove portions of her small and large intestines.

Speaking exclusively to Drug Today Medical Times, gastrointestinal oncologist at AMRI, Salt Lake, Dr Sanjoy Mandal who led the surgery, said, "The patient had a history of suffering from cervical cancer and had undergone radiotherapy and returned home after being declared cancer free."

He added, "She was alright for the nine months; thereafter she suddenly developed severe episodes of bleeding from her rectum," referring to a rare side effect of radiotherapy that causes injury and inflam-



Dr Sanjoy Mandal
Gastrointestinal Oncologist AMRI, Kolkata

mation of the intestines and can lead to rare complications.

Providing further details of the case, Dr Mandal said that preliminary investigations revealed that she was suffering from radiation-induced bleeding from

her large intestine, and on further detailed investigations doctors found that she had developed ulcers in her small intestines as well.

"When medical treatment failed to stop her bleeding episodes, the team members decided to operate on her and remove the affected portions," Dr Mandal said.

"We performed a high-risk surgery in which portions of the large intestine, small intestine, uterus, and ovaries were removed," Dr Mandal said.

Pointing out that the team also performed intra-operative enteroscopy, an effective tool in selected patients with occult gas-

trointestinal bleeding that correctly identifies a treatable source and prevents recurrent bleeding in about 40% of patients to confirm the source of bleeding, the gynecologic oncologist commented that it ensured that all sources of bleeding had been covered and ensured a quick recovery for the patient.

"During surgery, the patient also required the placement of a special catheter in the urinary tract to prevent injury," he added.

According to hospital sources, the patient needed monitoring in the ICU for three days and 14 days' stay in the hospital before she was discharged, and now

she is doing well.

Pancreatic cancer is uncommon in India when compared to other types of cancer. However, the prevalence has gradually increased over time. Pancreatic cancer is more common in elderly people, usually affecting people over the age of 60. It affects both men and women, with males having a somewhat higher incidence. Tobacco use, obesity, a family history of pancreatic cancer, chronic pancreatitis, and specific genetic abnormalities are all common risk factors for pancreatic cancer. Pancreatic cancer is frequently identified at an advanced stage.

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Young Goa hero breathes new life into people in three cities

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A brain-dead 25-year-old boy at Goa Medical College (GMC) in Bambolim became a ray of hope for four patients in three cities waiting for organ transplants when the relatives of the deceased decided to donate his heart, kidney, and liver to organ transplant recipients.

Organ donation is a medical procedure in which specific organs are recovered from one body and transplanted into recipients to replace a missing or damaged organ.

At the press conference, GMC Dean Dr Shivanand Bandekar stated that a 25-year-old from Belgaum had suffered a head injury during an accident. The Brain Stem Death Certification Panel declared the patient brain-dead in GMC. The organs were transported by ambulance from GMC, Bambolim, to the Goa International Airport, Dabolim, through a green corridor established by the Goa Police.

The State Organ and Tissue Transplantation Organisation (SOTTO) began the process for the retrieval of the organs after

the family of the deceased agreed to donate organs. In addition, SOTTO also initiated the procedure to identify suitable recipients from the waiting list.

He said, "This is the fourth deceased donor or-

In 2022, India recorded 1,589 kidney transplants, 761 liver transplants, and 250 heart transplants from deceased donors.

gan donation programme under the aegis of SOTTO Goa."

Dr Bandekar further informed that the National Organ and Tissue Transplantation allotted the heart to a patient in Chennai, the liver to a recipient in Delhi Army Hospital, and the kidneys to two patients in Goa.

He noted that in Goa, only three hospitals are certified to offer kidney transplants, which are not available in other hospitals.

Dr Bandekar further said, "His family dis-

played great courage and took the brave decision to donate the organs."

In India, the organ donation has been gaining traction lately, but there's still a significant gap between the need for organs and their availability.

One big reason for this gap is that many people in India aren't aware of how vital organ donation is.

The government, non-governmental organizations (NGOs), and health-care institutions have all been working hard to spread the word.

Another challenge is that families sometimes hesitate to agree to organ donation when a loved one passes away. By educating families and providing them with accurate information, for which people need to be convinced that organ donation doesn't harm the body's appearance.

The government has taken steps to make the organ donation process more efficient. They've created a national registry and placed transplant co-ordinators in hospitals to streamline organ procurement and distribution.

It may be noted that India has made significant progress in organ transplantation, especially with

kidney and liver transplants. However, there's still more to be done to ensure that all types of organs, like hearts, lungs, and pancreases, are readily available for those who need them.

In 2022, India faced challenges in obtaining organs from deceased donors. They recorded 1,589 kidney transplants, 761 liver transplants, and 250 heart transplants from deceased donors. On the positive side, kidney and pancreas transplants increased from just three in 2014 to 22 in 2022. However, the number of living donor kidney transplants also rose significantly, from 4,884 in 2014 to 9,834 in 2022. The number of liver transplants from living donors went up from 1,002 to 2,957.

Experts are concerned because, in India, a new person needs an organ transplant every 10 minutes. The government has made various changes to promote organ donation, such as eliminating certain rules and fees and making it easier to transport and place transplants in hospitals to streamline organ procurement and distribution.

It may be noted that India has made significant progress in organ transplantation, especially with

MP: Gwalior becomes dengue epicentre as cases double

DTMT Network
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The current outbreak of the dengue epidemic claimed its first victim in Gwalior on September 17, when an eight-year-old girl died while undergoing treatment for the disease at a private hospital in the city.

According to reports, an eight-year-old girl named Bhavsha from Vivek Vihar near the Chetakpuri area had been suffering from fever for the past 15 days and was treated by a private physician in the city.

However, when her condition deteriorated, she was referred to a private hospital, where she tested positive for dengue. During the admission, she fainted. Subsequently, a CBC test revealed that her platelets were only 25 thousand.

Following the report, on September 16, 2023, the doctors suggested taking her to Delhi for further treatment. She was transferred to Ganga Ram Hospital, where she passed away on September 17. After receiving this tragic news, Gwalior's District Malaria Officer, Dr. Vinod Doneria, along with his team, went to that private hospital and examined the document related to the girl's treatment.

After receiving the news about the girl's death, a team from the municipal department went to the girl's house and conduct-

ed an anti-larvae survey in nearby areas. Fogging was also carried out.

Local citizens complained that there was a water logging issue in the area, but despite repeated requests, the city municipal department did not take appropriate action.

There were 22 new active cases of dengue reported. Out of these 22 cases, 11 were from Gwalior, while the remaining cases were reported from nearby areas.

More than 100 suspected patients were examined at Gajra Raja Medical College and Hospital. The majority of patients are from the Thatipur, Kaithwali Gali area, Gulabpuri, Guraguri Naka, Suraiya Pura, and Gwalior. In addition, the patients from Datia, Shivpuri, Bhind, Morena, and Ambah districts were also found to be infected.

A healthcare professional on the condition of anonymity, said, "The tragic death of an eight-year-old girl serves as a wake-up call for all of us to act responsibly and take appropriate actions and precautions to mitigate this issue."

Dengue is a mosquito-borne disease that infects humans through infected *Aedes aegypti* or *Aedes albopictus* mosquitoes. Symptoms of dengue include fever, headache, body pain, fatigue, vomiting, and rashes.

Doctors and public health experts advise peo-

The number of dengue cases in Gwalior district increased to 240, while 400-500 cases of skin infections have been reported in the district in the past week.

In addition to dengue cases, skin infections have recently become a significant issue in Madhya Pradesh. As per a media report, in the Gwalior district of Madhya Pradesh, 400 to 500 patients with skin conditions visit the government hospital's outpatient departments (OPD) every day.

The Gwalior district has experienced 11 new cases of dengue, resulting in an increase in the total number of cases to over 240, while in Indore, 122 total dengue cases were reported. Talking to the media, Dr. Anubhav Garg, HOD of the dermatology department at Jaya Arogya Hospital (JAH), said, "About 400 to 500 skin disease-related patients come to the OPD every day. Some patients experience itching, rash, and irritation, while others suffer from fungal infections. The rainy season is also the reason for these issues."

Dr Garg advised citizens by saying, "During the rainy season, people should not wear wet clothing. Cotton clothes are a good option. Patients should maintain good hygiene practices, use soap to clean affected areas, and consult a doctor if they experience any symptoms."

Additionally, to overcome the dengue issue, a team from the Malaria Department and Municipal Corporation sprayed pesticides at various places in Gwalior. Furthermore, the team was instructed that if dengue mosquito larvae were found in the house, a penalty of Rs. 500 would be imposed on those responsible.

by Sailee Rangnekar

ple to avoid visiting dengue-prone areas, maintain good hygiene, use mosquito repellants, seek medical attention if they experience any symptoms, and avoid self-medication

Only 2 % of Indian elderly covered under health insurance: Survey

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A large segment of the country's population, particularly the elderly, continues to be unable to obtain health insurance. According to a recent study by Plum, a tech-based health insurance provider platform, 98% of India's senior citizen population is uninsured.

The country currently has 138 million senior people, a figure that is expected to rise by 56 million by 2031. It polled roughly 300 customers and discovered that 29% of employees believe their company's health insurance is inadequate in terms of the sum insured.

According to a report by NITI Aayog in 2021, at least 30% of the population, or 40 crore people, do not have any financial health protection in the

country.

According to the survey, just 25% of organisations (from Plum's 3500+ customer base) have parental coverage. Because employer-sponsored insurance does not cover parents and family members, around 13% of employees used super top-up.

The firm has announced its super top-up health insurance plan, which covers a variety of advantages. It will allow portability if the organisation changes.

Available data suggest that in 2021, 514 million people in India were covered under health insurance schemes, covering 37% of the population, while around 70% of the population is covered under public or voluntarily private health insurance.

The Indian health insurance industry's gross written premium was over

637 billion rupees in 2021, with public sector health insurers recording insurance premiums worth 272 billion rupees, private sector health insurers averaging 159 billion rupees, and standalone health insurers recording around 151 billion rupees.

Among the states, Maharashtra recorded the principal share of health insurance premiums, with the southwestern state accounting for over 183 billion rupees followed by Tamil Nadu and Karnataka.

Similarly, the Economic Survey 2022-23 revealed that the Indian government's budgeted expenditure on healthcare nearly touched 2.1% of GDP in FY23 and 2.2% in FY22, compared to 1.6% in FY21.

According to the document, the share of expenditure on healthcare

services increased from 21% in FY19 to 26% in FY23.

Abhishek Poddar, co-founder and CEO of Plum, said, "The 98 per cent of uninsured senior citizens is a stark reminder of the vulnerabilities they face. It will always be our endeavour to innovate and come up with solutions that simplify access and availability of health insurance for the underinsured."

"Our goal is to contribute to the larger vision of 'Insurance for All by 2047', ensuring that every individual, regardless of their age or circumstances, can access the protection they deserve," he added.

Incidentally, when this correspondent applied for health insurance, he was denied insurance because he was under medication for hypertension.

Dr Mandaviya launches policy for pharma-medtech innovation

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The Union Minister of Chemicals and Fertilisers and Minister of Health and Family Welfare, Dr Mansukh Mandaviya, recently unveiled a groundbreaking initiative aimed at propelling India's pharmaceutical and medical technology sectors to new heights.

This initiative, comprising the National Policy on Research and Development and Innovation in the Pharma-MedTech Sector in India and the Scheme for the Promotion of Research and Innovation in the Pharma-MedTech Sector (PRIP),

marks a significant shift towards fostering innovation and value in these vital industries.

While delivering his address during the event, Dr Mandaviya emphasised the need for a transformation from a cost-centric to a value-centric and innovation-centric approach in Indian Pharma and MedTech.

He highlighted the scheme's core objectives, focusing on elevating India's position as a global leader in pharmaceuticals while simultaneously addressing quality, accessibility, and affordability concerns.

"The policy will help create an ecosystem of

skills and capacities, including academia and the private sector, and nurture new talent through startups," Dr Mandaviya elaborated.

Echoing the sentiments of "Jai Jawan, Jai Kisan, Jai Vigyan, and Jai Anusandhan," Dr. Mandaviya underscored India's commitment to nurturing innovation in brainpower and manpower.

He cited the COVID-19 response as a testament to India's resilience and capacity for innovation. Dr Mandaviya stressed the importance of mass-producing pharmaceuticals and medical devices and highlighted

the establishment of three bulk drug parks in Himachal Pradesh, Vizag, and Gujarat, along with four medical device parks in Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, and Tamil Nadu, as critical steps to fortify the sector.

"India can only achieve self-reliance in pharmaceuticals and medical devices by strengthening its research and development infrastructure," Dr Mandaviya further emphasised. He stressed the significance of tailoring policies, products, and research to align with both domestic and global needs, all while fostering self-sufficiency.

Kolkata doctors triumph over pancreatic tumor, saves a life!

Rajeev Choudhury
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In a rare incidence, the doctors of a Kolkata hospital saved the life of a 50-year-old obese woman by removing a malignant tumour from her pancreas using laparoscopic surgery.

The woman came to the AMRI hospital in Mukundapur, complaining of rapid weight loss after visits to multiple hospitals across the city failed to detect the cause of her rapid weight loss.

Doctors at the AMRI said that after some preliminary investigations failed to pinpoint the cause of weight loss, they decided to undertake a triphasic CT scan of her

abdomen, an imaging scan used to identify abdominal abnormalities by creating cross-sectional images of abdominal structure at three different time points or phases, including that of the liver, kidneys, pancreas, spleen, GI tract, and other organs.

Talking to Drug Today Medical Times, Dr Sanjoy Mandal, Consultant gastro-oncologist and surgeon, said that the CT scan revealed a tumour in the body of the pancreas.

"The woman was lucky that her tumour was just confined to her pancreas and had not spread to other organs, which is very rare," Dr Mandal said.

Pointing out that in normal circumstances, cancers of the body of the pancreas, when detected, have already spread beyond means of treatment, Dr Mandal added, "However, in this case, possibly due to early and detailed investigation, the cancer was detected at a treatable stage."

The patient underwent a successful laparoscopic surgery during which the surgeons removed the body and tail of her pancreas along with the adjoining spleen and adjacent lymph nodes.

"We also decided to remove her spleen and adjacent lymph nodes to achieve the best possible results," Dr Mandal said.

Post-surgery, the lady was discharged after two days and is currently recovering. Since she had undergone laparoscopic surgery, she had a quick recovery and was discharged in two days from the hospital.

According to available information, pancreatic cancer is the twelfth most common cancer in terms of incidences and the seventh largest killer cancer worldwide, and claimed almost five hundred thousand lives in 2020.

The average five-year survival rate for pancreatic cancer patients globally is under 10%, making it one of the deadliest cancers.

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Marathon lung transplant saves man's life in Mumbai

A Singh
@drugtodayonline.com

Doctors at Global Hospital Mumbai saved the life of a 57-year-old man by carrying out a complex and 12-hour long lung transplant.

The patient was suffering from interstitial lung disease due to which he was unable to walk even a few steps without oxygen. He had difficulty in breathing which showed remarkable improvement post-surgery. He is now able to walk 600 metres without oxygen support with ease.

Doctors said that interstitial lung disease is a debilitating disease that leads to scarring of lung tissue causing the lungs to fibrose and become stiff.

After being worked up thoroughly a diagnosis of

Idiopathic Pulmonary Fibrosis was made and he was advised home based oxygen therapy to relieve his symptoms. Idiopathic Pulmonary fibrosis is a rare subset of interstitial lung disease and the only definitive treatment is Lung Transplant.

Dr Samir Garde, Director - Pulmonology, Interventional Pulmonology and Lung Transplant, Global Hospital, Parel, Mumbai said, "At the end of May 2023, he needed oxygen support. Due to lung fibrosis, he developed pulmonary hypertension meaning the blood pressure of the lungs started going up. That is the condition where it can affect the right side of the heart and the right side can even fail. Thus, one will get breathless with the slightest amount of exertion and there is desaturation as the oxygen

level drops down."

"The incidence of lung fibrosis has gone up by 15% in the last 5 years and the cause behind it can be indoor and outdoor pollution. Thankfully, the patient was well-motivated, taking physiotherapy and following the nutritional advice. After registration in May, he was fortunate to get the donor lungs for transplant. He recovered well and could even complete a stretch of 600 metres without stopping and oxygen support post the surgery before being discharged. In addition to all other measures that transplant recipients take, he will have to be extra cautious as lungs are directly exposed to the atmosphere," Dr Garde added.

Dr Chandrashekhar Kulkarni, Senior Consultant CVTS and lead Heart & Lung Transplant Surgeon at Global Hospi-

tals, Parel Mumbai said that pulmonary diseases like Interstitial Lung Disease when present with a long-standing history, the chances of heart being affected are more. Fortunately, since Mr Vijay was in regular follow up, the multidisciplinary team here could guide him with interventions and stabilise his clinical condition pre-operatively. "We initiated a VA ECMO during the surgery to reduce the load on the heart and it helped in a faster recovery. At the time of discharge, Mr Vijay could walk unaided and without oxygen support which is significant improvement and he will continue on the road to recovery well," he added.

"Since 2021, my breathing troubles and inability to walk have greatly impacted my work concentration," he added.

NHRC issues advisory for welfare of transgenders

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The National Human Rights Commission (NHRC) has issued guidelines to the Central and State governments and UT Administrations to ensure the well-being of transgender individuals. This guidance, developed through discussions with various stakeholders and LGBTI experts, acknowledges that the Transgender Persons (Protection of Rights) Act, 2019 has legally recognized and protected the rights of

transgender individuals.

Despite these legal advancements, transgender individuals still face discrimination in areas such as employment, healthcare access, and social inclusion.

The NHRC has called upon the central and state governments to implement its recommendations effectively and has requested action reports within two months.

The guidance focuses on six key areas: education, healthcare, employment, inclusivity, welfare, and grievance resolution

for transgender individuals. It also suggests treating a deceased government employee or pensioner's single transgender child as an unmarried daughter for family pension and benefits.

Additionally, it recommends allowing transgender individuals to inherit ancestral agricultural land and providing them with multi-purpose identity cards for accessing government programs and benefits.

The NHRC advises insurance companies to accept transgender certifi-

cates issued by appropriate authorities for documentation.

It urges the timely allocation of funds for Garima Greh and encourages outreach to transgender individuals' family members through educational campaigns.

Furthermore, the NHRC called for establishing Transgender Protection Cells under the Director General of Police in each state to monitor offences against transgender individuals and address complaints of sexual harassment effectively.

Gurugram doctors defy odds to save 1-month-old baby with heart ailment

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A team of doctors at a Gurugram hospital saved the life of a one-month-old African baby, who was suffering from a complex congenital heart defect, by carrying out complex surgery.

The baby was brought to Paras Hospital with breathing difficulty and inability to take adequate feeds and records from the home country in which the child was diagnosed with a hole in his heart and other complexities of heart structure.

The parents had lost all hope because no other hospital in Africa was willing to operate on the baby because of the complexity of the case and challenge of operating on a 3kg baby with complex heart defect. The baby was evaluated by the Pediatric Cardiology and Pediatric Cardiac surgery team who diagnosed the patient's underlying condition.

On evaluation, it was

diagnosed that baby was suffering from Complex Congenital Heart defect where both great vessels Aorta and Pulmonary Artery was arising abnormally from right ventricle [Double outlet right ventricle defect (DORV)] with a large ventricular septal defect (hole in the heart). Accessory mitral valve tissue was also present causing severe leakage from Mitral valve (severe MR) and the main vessel which carries blood to the whole body was small (Hypoplastic Aortic Arch) causing unrestricted pulmonary blood flow.

Doctors emphasised that mostly these complex cases require two to three surgeries to rectify these defects over a period of two to three years.

The team of doctors had a detailed surgical meeting to look for feasibility of giving the child single stage complete repair of this complex heart defect.

Dr Mahesh Wadhvani, Chief and HOD - Paediat-

ric and Adult Cardiothoracic & Vascular Surgery, Paras Health, said, "This was a complex case requiring immediate medical intervention. The baby arrived at the hospital with an extremely complex life threatening heart defect. The main challenge was not only to save his life but also to ensure the baby remained healthy. The unique aspect of the case was the surgery performed i.e., Routing the vessels to correct chambers, closure of hole in heart, repairing the Mitral valve and Aortic Arch Augmentation; a complex cardiac surgery. Unlike the usual approach where the procedure is carried out in two stages, i.e., arch repair with PA band followed by intracardiac repair as second stage, in this instance, considering the case's complexity and team's experience, both procedures were carried out simultaneously."

"The surgery was done successfully and as expected the baby had a morbid postoperative stay in ICU

where the baby was well managed, the baby was discharged within 09 days, and now leads a thriving, healthy life. Additionally, the team's dedication and expertise, combined with the hospital's cutting-edge technology, allowed us to provide the best possible care to the young patient," Dr Wadhvani added.

Dr. Deepak Thakur, Senior Consultant - Paediatric Cardiology, said, "The baby was suffering from an exceptionally rare combination of heart defects. Besides the intricate surgery, managing a small baby 3kg with complex cardiac surgery in the ICU is typically quite demanding and has equally tough challenges as the surgery. In this case, the child spent 7 days in the ICU and was in critical condition. However, with proper preoperative planning and continuous monitoring and prompt intervention on complications post surgery the baby was efficiently treated and was saved."

Quack practising over ten years in Guwahati arrested

Rajeev Choudhury
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A quack masquerading as a practitioner of modern medicine using a fake registration number was arrested in the Lokhra area of Guwahati recently by the city police.

The quack, identified as 63-year-old Paramesh Chakravarty, was arrested by a team from Fatashil Ambari police station, which initiated an inquiry against the accused after an FIR was lodged by renowned crusader Dr Abhijit Neog earlier in June this year.

According to police sources, they have registered a case under Section 419/420/468/471 IPC based on Dr Neog's complaint.

The accused has been remanded to judicial custody, according to media reports.

Dr Neog, who is the Principal Assessor of the National Accreditation Board for Hospitals and Healthcare Providers (NABH), a constituent

According to a 2021 report, as many as 40% of the doctors practicing in Assam's tea gardens do not possess any valid licence to practice modern medicine.

board of the Quality Council of India, and Chief Operating Officer of the city's Arya Hospital, stated in his complaint that the accused is practising as a general physician at Charulakshmi Medical, Jyotikuchi Tiniali, Lakhra Road, Guwahati, and is providing services as a doctor on the strength of a few certificates from dubious and unrecognised institutes.

Speaking to Drug Today Medical Times, Dr Neog said, "Our investi-

gation revealed that the accused does not have any legal qualifications to practice modern medicine and is not registered in the Indian Medical Registry, which is required for all medical graduates to practice the current system of allopathy."

"When we searched the records of the National Medical Commission in the Indian Medical Register, the registration number 4386 displayed by the accused in his prescription belongs to Ms Mythili Kalathar and was issued by the Assam Council of Medical Registration in 1967."

Describing the situation of the proliferation of fake doctors in the state as serious, Dr Neog told Drug Today Medical Times that if such a person (the accused) can go undetected in the state capital, imagine what the situation would be in the hinterland.

He called upon the state health authorities and people alike to remain vigilant and report any such people to the authorities.

"There is a need to build up a mass movement against such unscrupulous elements across Assam as they are playing with the lives and limbs of people with impunity," Dr Neog added.

The exact estimates of determining quacks in India are challenging due to the unregulated nature of the practice.

Despite several efforts to crack down on the quackery by the government, they continue to operate in various parts of the country.

According to a 2021 report, as many as 40% of the doctors practicing in Assam's tea gardens do not possess any valid licence to practice modern medicine.

According to government figures, Assam has 803 big tea estates operated by private corporations spread across 27 districts. It is estimated that approximately one million casual labourers work on these plantations, where basic ding healthcare, housing, and clean drinking water are among the worst in the state.

Lower limb reconstruction can be a lifesaver, say experts

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Every year, thousands of legs are amputated in India due to traffic accidents and illnesses such as cancer, particularly cancers of bones and other soft tissues, which could be avoided in most of the victims if they were brought to a hospital equipped with a multidisciplinary lower-limb reconstruction team, doctors of Amrita Hospital in Faridabad's Lower Limb Reconstruction Centre said.

Elaborating on the subject, senior consultant, professor, and HoD, Plastic & Reconstructive Surgery, Amrita Hospital, Dr Mohit Sharma, Faridabad, said, "Thousands have their legs mangled in road collisions every year, and the unfortunate part is that most of them are young people."

Latest microsurgical techniques have made it possible to save the limbs of a patient through reconstruction of a patient through reconstruction.

Dr Mohit Sharma said, "The incidence of post-traumatic amputation is also high due to a lack of on-the-spot stabilisation and a delay in getting treatment," he added.

Pointing out that even when the patient reaches a trauma centre in time, the rate of disability is high because of the lack of specialised surgeons, he further added that, however, much of this morbidity can be avoided. "Latest microsurgical

techniques have made it possible to save the limbs of a patient through reconstruction," Dr Mohit Sharma said.

Emphasising that there are two important factors in saving the legs of a road accident or trauma victim from amputation, he added, "The first is to take the patient to a hospital as quickly as possible after trauma injury, while the second is to shift them quickly, once they have been stabilised, to a tertiary care centre that has a multidisciplinary lower limb reconstruction facility with specialists like microvascular plastic and reconstructive surgeons, orthopaedic surgeons, vascular surgeons, critical care specialists, and experienced anaesthetists."

Dr. Mrinal Sharma, HoD of the orthopaedics department at the hospital, said, "If prompt atten-

tion is not given, trauma victims often lose their legs to amputation, mostly below the knee joint."

"This is because the tissue and muscles of the affected part become dead by the time the right treatment is provided. If there is bone loss, a vascularized bone graft needs to be used," he added.

"If this is also not possible, then the surgeon can do the bone transport using specialised techniques. Lower limb reconstruction in mangled extremities is a very complex procedure that can't be done at a small hospital," Dr Sharma pointed out.

Dr Mohit Sharma pointed out that in the past year, the team has done six cases of lower limb reconstruction at the hospital, and all have been salvaged, and four of them have even started walking.

SMEs are still reeling under pandemic effect, but future is bright for the sector: Sandipan Ray

Rajeev Choudhury
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The Covid pandemic which was put off an international emergency a few months ago, has claimed over six million lives globally and has not only triggered recession across the globe but also created havoc in the health of the people, especially mental health. Millions across the globe, particularly in developing countries including India have lost their livelihood due to once in a century infectious disease of this enormous epidemic. The previous such epidemic was recorded in 1918 caused by H1N1 virus and named Spanish Flu, which claimed over 100 million lives.

This time around, through international and

advancement of science efforts though the reported deaths are much lower, the World Health Organization estimates that almost 770 million people have been affected by the disease resulting in about seven million deaths globally.

In India, the backbone of the economy, the micro, small and medium industry has borne the brunt of the pandemic in terms of job loss, reduction in income and hundreds of thousand family slipping back to poverty.

Lockdown 1.0 and 2.0 significantly impacted 25% and 17% of India's workers, primarily in unorganized manufacturing and service sectors, respectively. This joblessness impacted the service sector, as it reduced purchasing power and affected the overall economy.

In a candid conversation



Sandipan Roy, founder CEO, SMB Connect

Sandipan Roy, founder of SMB Connect, discussed the devastating impact of the Covid pandemic on Indian small and medium businesses, including the pharmaceutical sector, and its impact on the workforce. In a candid conversation with Drug Today Medical Times Talking about IT layoffs Mr Ray says that the pandemic-triggered recession is not the sole reason, according to experts.

"Although it is a factor, there are other reasons for the layoffs. While the re-

cession has not accelerated as much as expected, studies suggest it may not last beyond 2023, so there is hope it may bounce back. IT layoffs were bound to happen as companies need to rationalize their costs due to the industry's slow demand and the return to a hybrid model of working," Mr Ray said.

"Companies are now looking to rationalize costs and save money by excess manpower rationalization," he added.

Regarding the massive layoffs, Mr Ray said that

having a good trend and skilled people available is a great advantage for small businesses.

Pointing out that though, small businesses face challenges as they are not very resilient and are cautious about overspending, he added, "However, forward-thinking SMEs realize that investment in technology, IT, and digital transformation is necessary for success."

Emphasising that some SMEs are willing to invest in talented people to achieve this, he further added, "These businesses may not offer high salaries, but they take care of their employees' basic needs."

Stressing that there are many opportunities for smart, futuristic SMEs to succeed and acquire good talent Mr Ray cautioned that if SMEs do not have the funds to invest, they

are open to cost-sharing.

Pointing out that the layoff by large companies can be indeed open a window of opportunity for the SMEs as they can be a more stable option for employment of technically competent people.

"Our organization is also receiving inquiries from people seeking stable jobs, which demonstrates the potential for SMEs to grow and attract talent," Dr Ray said.

Speaking about the health sector, Mr Ray said, "The current situation raises concerns, especially as a Health Organisation associated with those affected."

"The mental stress and trauma of being laid off have a major impact on people's well-being, even with severance pay," he added.

However, pointing out

that all is not lost as India's startup culture offers opportunities for talented individuals with good ideas to start their own businesses.

Emphasising the impact of retrenchment on mental health, but also highlights the various opportunities available at various levels, Mr Ray said, "It is up to individuals to decide whether they want to use this situation as an opportunity or let it affect their success."

"Personally, focusing on positive outcomes from each activity, despite official statistics on layoffs, is the way forward," Mr Ray added.

Concluding that SMEs in India id the axle that has helped the country to emerge from a poverty ridden to country to world's fifth largest economy, Mr Ray said, "SMEs,

mainly in manufacturing and services, require ERP services for data collection, dashboard creation, and decision-making."

In order to optimise their expenditure the SMEs can outsource their ERP implementation that requires technical expertise.

"Digital presence through social media and interactive websites can help businesses reach out globally and attract inbound leads, Mr Ray added.

"These two areas present significant opportunities for businesses to invest in seamless production, dashboards, and digital marketing, and with a little helping hand from the government, helping the SMEs to bounce back and contribute to India to be an economic powerhouse in the near future.

Abbott recalls digene gel from the market after DCGI notification

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The pharmaceutical company Abbott India has recalled multiple batches of the popular antacid Digene Gel. This action comes in response to an advisory issued by the Drugs Controller General of India (DCGI), which cautioned against the use of the product.

The DCGI urged individuals to refrain from using Digene Gel given potential safety concerns. It also encouraged people to report any adverse effects they might encounter.

On August 9, an incident was reported involving Digene Gel (mint flavour) batch no. 510303D7. In this case, a customer noted discrepancies between two bottles of the same batch.

One bottle exhibited a regular taste (sweet) and

If the product is found on the market, the authorities should collect samples and take necessary actions as per the provisions of the Drugs and Cosmetics Act and Rules.

DCGI

a light pink colour, while the other bottle from the same batch had a white colour with a bitter taste and a pungent odour, as per his complaint.

In response to these concerns, Abbott India informed the DCGI on August 11 of its decision to voluntarily recall the affected product—specifically Digene (mint flavour) batch no. 10303D7—as well as Digene Gel orange with

batch numbers 500351D7, 50035207, 500353D7, and 50035407.

Additionally, Abbott India Limited ceased production of all variants of Digene Gel at its Goa facility.

Drugs Controller General Dr Rajeev Singh Raghuvanshi announced that Abbott India has issued a voluntary product recall of all batches of Digene Gel manufactured at the Goa facility.

Pointing out that the recall is due to potential safety risks, including adverse reactions, DCGI advised healthcare professionals and doctors to exercise caution when prescribing and advising patients to use the product.

The DCGI further recommended discontinuing the use of Digene Gel manufactured in Goa, instructing wholesalers and distributors to remove affected batches from distribution.

It also called on regulatory authorities to closely monitor the movement, sale, distribution, and stock of the drug in the market.

If the product is found on the market, the authorities should collect samples and take necessary actions as per the provisions of the Drugs and Cosmetics Act and Rules, the DCGI statement noted.

"Nivolumab ensures 1.7 times better survival in metastatic lung cancer"

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Princeton-based drug major Bristol Myers Squibb has announced that the result of its six-year trial of immunotherapy drug nivolumab, marketed as Opdivo with plus Yervoy (ipilimumab), increased survival by 1.7 times from 13% for chemotherapy to 22%.

In a statement, the company said that their exploratory analysis found that in patients with PD-L1 expression of 1%, patients treated with Opdivo with Yervoy were alive at six years, more than three times as many as those treated with chemotherapy (16% vs. 5%, respectively).

The follow-up results are to be presented in an oral presentation at the IASLC 2023 World Conference on Lung Cancer

on September 11, 2023.

Patients who responded to Opdivo plus Yervoy treatment showed a higher proportion of 80% tumour burden reduction compared to chemotherapy in both PD-L1 1% and 1% subgroups. Additionally, patients with 80% tumour burden reduction had higher six-year overall survival rates compared to chemotherapy, Bristol Myers said in a statement.

Dr Solange Peters, professor and chair of medical oncology and the thoracic malignancies programme in the Department of Oncology at the University Hospital of Lausanne in Lausanne, Switzerland, commented on the findings, saying, "Immunotherapy has transformed the treatment of advanced lung cancer, and thankfully, a diagnosis no longer means the

same thing as it used to for many patients.

"With these six-year results, we are seeing remarkably sustained and durable clinical survival benefits with nivolumab plus ipilimumab year-over-year," he added.

"The long-term efficacy seen with the dual immunotherapy regimen in CheckMate-227 reinforces the importance of nivolumab plus ipilimumab to transform outcomes for appropriate patients with metastatic non-small cell lung cancer," Dr Peters said.

"We are ecstatic to see Opdivo plus Yervoy continue to demonstrate almost double the overall survival rates as chemotherapy after six years of follow-up—the longest-ever for a Phase 3 trial with immunotherapy in metastatic non-small cell lung cancer.

Further, the Opdivo plus Yervoy regimen more than tripled survival for patients with PD-L1 expression <1%, a population that is difficult to treat and faces high unmet needs," said Dr. Abderrahim Oukessou, M.D., vice president, thoracic cancers global programme lead at Bristol Myers Squibb.

"Our results presented at WCLC 2023 build on our legacy of transforming survival expectations with immunotherapy combinations. Looking ahead, we are excited to expand our research into targeted and small molecule therapies, as well as additional immunotherapy combinations, in the hope of potentially finding solutions for as many people living with thoracic cancers as possible," he added.

USFDA permits nykode to conduct trials for hpv16+ cervical cancer

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Oslo-based pharmaceutical giant Nykode Therapeutics, engaged in the discovery & development of novel immunotherapies, has recently announced that the United States Food and Drug Administration has approved its investigational new drug application for the Phase 2 clinical trial.

The company issued a media statement recently, stating that the study will compare VB10.16, the company's wholly-owned off-the-shelf therapeutic cancer vaccine candidate for HPV16-positive cancers, to Roche's PD-L1 inhibitor atezolizumab, marketed as Tecentriq, in patients with HPV16-positive, PD-L1-positive, recurrent, or metastatic cervical cancer, the fourth leading cause of cancer death in women worldwide and is most frequently diagnosed between the ages of 35 and 44.

Nykode further an-

nounced that it is on track to begin the trial in the fourth quarter of 2023.

Commenting on the approval, the CEO of Nykode, Michael Engsig, said, "We are excited to open the IND for the C-04 trial with VB10.16. It is an important milestone."

"We look forward to presenting the trial design and the overall VB10.16 development strategy at our Capital Markets Day in New York on September 20, 2023," he added.

The experimental drug, called VB10.16, is a first-in-class off-the-shelf therapeutic cancer vaccine candidate under development for the treatment of cancers caused by the human papillomavirus type 16 (HPV16) and is based on Nykode's Vaccibody technology platform, which allows antigens to be targeted to antigen-presenting cells.

Nykode said its candidate vaccine produced significant HPV16-specific T-cell responses and was linked to clinical

outcomes. In Phase 1/2a research in pre-cancerous HPV16-induced high-grade cervical intraepithelial neoplasia, the candidate vaccine further showed a statistically significant connection between immune and clinical responses.

on September 20, 2023, Nykode announced significant progress of the trial in New York.

It said that the unique targeted vaccine technology holds substantial promise in autoimmune disorders, affecting approximately one in every ten individuals worldwide. VB10.16, a therapeutic vaccine candidate for HPV16+ cancers

The trial for treating HPV16-driven cancer types, has demonstrated the generation of durable, clinically significant T cell responses, with evidence including persistent T cell clones following vaccination and substantial changes in blood cell composition, the company announced.

PMCPA to take action against Novartis for breaching the marketing code in the UK

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The United Kingdom drug marketing body, the Prescription Medicines Code of Practice Authority (PMCPA), has said it is initiating action against the UK arm of pharmaceutical giant Novartis for breaching the marketing norms for its multiple sclerosis drug Meyzent.

In its ruling released recently on a complaint of an anonymous medical professional, PMCPA ruled that "breach of the following clauses of the 2021 Code for referring to Mayzent initiation in patients with a history of myocardial infarction and heart failure without making apparent the absolute contra-indication in patients with a history of myocardial infarction or heart failure in the previous six months, except on a separate webpage and within the prescribing information, which, in the Panel's view, was insufficient to negate this immediate misleading impression."

In its ruling, the panel

PMCPA ruled that Novartis had breached Clauses 6.1 and 6.2, stating that the company had failed to maintain high standards. They also noted that the supplementary information to Clause 2 led to a breach of this clause.

noted that the complaint was about the promotion of Mayzent (siponimod) on the 'Dosing and Administration' page on the website of the company. It noted that the webpage at issue had a banner image at the top, beneath which was a hyperlink to the prescribing information and four key sections: initiation, titration, monitoring, and stopping. The complaint appeared to be about the Initiation section.

The Panel further noted the Initiation section of the webpage included in large, capitalised font: 'Starting patients on a once-daily basis, Mayzent follows a well-defined initiation protocol' and highlighted three key areas: 'Genotype testing',

'Blood testing', and 'Skin examination'.

"Further down the webpage, beneath a dosing table, the highlighted box identified by the complainant was headed 'Additional tests for at-risk patients' and referred to eye tests and ECG monitoring," it further noted.

The Panel ruled that Novartis had breached Clauses 6.1 and 6.2, stating that the company had failed to maintain high standards. They also noted that the supplementary information to Clause 2 led to a breach of this clause.

The Panel was concerned that the information on initiating patients with a history of myocardial infarction or heart failure without mention-

ing that Mayzent was contraindicated in patients with myocardial infarction, decompensated heart failure or NYHA class III/IV heart failure could lead to readers thinking that such patients could be treated with Mayzent.

The panel considered the omission of such information insufficient and could potentially prejudice patient safety and reduce confidence in the pharmaceutical industry.

It may be recalled that this is the third serious offence by the pharmaceutical offender, and according to PMCPA, Novartis has repeatedly caused discredit and reduced confidence in the pharmaceutical industry.

It may be recalled that in August 2023, the company got in trouble for a serious breach of drug marketing in the UK over its podcast called 'Heart to Heart' for heart failure specialist nurses where it claimed about how effective and safe their drug, Entresto, was.

One of the claims that got them in trouble was saying that Entresto could

give people more energy when they get dressed. The PMCPA said this claim couldn't be proven and was misleading.

But the most serious problem was when Novartis talked about a "slight but acceptable drop in renal function" with Entresto, a safety claim. The PMCPA didn't like that this claim wasn't qualified or explained properly, and it made it seem like renal function (how well your kidneys work) wasn't a big deal.

Because of these issues, the PMCPA said Novartis "reduced confidence in and brought discredit upon the industry." This is a big deal and is considered a major breach of the rules.

The complaint about the podcast was made by someone who works in heart health but wanted to stay anonymous.

At the time, Novartis UK admitted to the breaches and said they're looking at their internal processes. They still want to be a responsible partner for patients and the healthcare system.

COPD: Chinese researchers develop unique way to auto-repair lung tissue

Rajeev Choudhury
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Researchers from Tongji University, Shanghai, China, revealed an innovative method to repair damaged lung tissues by using a patient's own pulmonary cells in patients with chronic obstructive pulmonary disease (COPD).

This study was recently presented at the European Respiratory Society International Congress in Milan and demonstrated the ability of the progenitor cells to rebuild the diseased lung tissues in COPD patients. Stem cells can be transformed into any cell, while progenitor cells are derived from stem cells and are only able to differentiate into cells that belong to the same tissue or organ.

COPD is a group of diseases that obstruct the airflow and cause breathing difficulty. The most common COPD conditions are chronic bronchitis and emphysema.

Researchers said that COPD is responsible for more than 3 million deaths every year in the world.

Scientists conducted Phase I trials with 20 COPD patients to test P63+ progenitor cells' safety and effectiveness. They collected these cells from the airway tract, cloned them to create a billion new cells, and transplanted them into the patient's lungs using bronchoscopy. Seventeen patients received treatment, while three served as a control group.

Researchers evaluated the participants for 24 weeks and found that after 12 weeks, the average diffusing lung capacity (DLCO) had increased from 30 to 39.7% and further to 40.3% at 24 weeks. Moreover, in a six-minute walk distance test, the average distance increased from 410 metres to 447 metres. They also conducted quality-of-life tests (the St. George's Respiratory Questionnaire, or SGRQ) and observed that the median score had decreased by seven points, indicating an improvement. Additionally, the treatment was suitable for the two patients with mild emphysema.

The study presented at the European Respiratory Society International Congress in Milan showed the ability of the ancestral cells to rebuild the diseased lung tissues in COPD patients.

The research plan is to run a Phase II study for a new COPD treatment that has been approved by China's National Medical Products Administration (NMPA), which is the Chinese analogue of the US Food and Drug Administration (FDA).

Lead researcher, Prof. Wei Zuo, Tongji University, China, said, "Stem cell and progenitor cell-based regenerative medicine may be the biggest, if not the only, hope to cure COPD."

"P63+ progenitor cells are known for their ability to regenerate the tissues of the airways, and previously we and other scientists have shown in animal experiments that they can repair the damaged epithelial tissue in the alveoli—the tiny air sacs in the lungs that play a crucial role in the exchange of gases between air breathed in and the blood supply to the lungs," he added.

He mentioned that progenitor cell transplantation boosts pulmonary functions, mitigates symptoms, increases life expectancy, and reduces the risk of mortality in COPD patients. Nevertheless, the technique of stem cell transplantation

was able to treat mild emphysema, but it is not yet possible to repair severe emphysema.

He said, "A similar therapeutic strategy is also being tested in patients with lethal lung fibrotic diseases, including idiopathic pulmonary fibrosis. We are going to test the treatment's efficacy in larger groups of people with more lung diseases. We hope to develop the treatment for clinical use within about two to three years."

Pointing out the research, Prof. Omar Usmani, Imperial College London (UK), and Head of the European Respiratory Society, said, "The results from this phase I clinical trial are encouraging. He noted that the study has limitations due to uncontrolled progenitor cell uptake; therefore, its response is not clear for some patients. Prof. Usmani is hopeful that more information will be made available through further studies.

Vasu Goyal
London

Seven of ten survivors of heart attacks and strokes, despite occurring once in every 40 seconds across the United States, do not know the level of their LDL cholesterol, popularly known as 'bad cholesterol,' which contributes considerably to cardiovascular disease and raises the incidence of heart attacks and strokes, a survey published by Harris Poll revealed.

The survey found that 75% of heart attack and stroke survivors reported high cholesterol, and 47% of stroke survivors were unaware of their LDL cholesterol readings.

The Association, the world's leading voluntary organisation dedicated to fostering better lifestyles for all, performed the survey, which discovered that 75% of heart attack and stroke survivors had excessive cholesterol. However, just 49% recognised the need to prioritise cholesterol reduction.

Commenting on the survey findings, Dr Joseph C. Wu, Director of the Stanford Cardiovascular Institute and Professor of Medicine and Radiology at Stanford University School of Medicine and the president of the American Heart Association volunteers said, "There is a pervasive lack of public awareness and understanding around bad cholesterol and its impact on your cardiovascular health."

"As bad cholesterol usually has no symptoms, we often find that many patients are walking around without knowing they are at risk or how to mitigate it," he added.

Describing the survey results as an eye-opener, Dr Paul Burton, senior vice president and chief medical officer of Amgen, said that the survey results show that people need to start talking about their LDL and cholesterol numbers and appropriate steps for testing and treatment with their healthcare providers.

The survey further revealed that sixty-nine per cent of people who have had a heart attack or stroke have heard about LDL cholesterol. However, a sizable minority (47%) is ignorant of their LDL level, which is essential in forming fatty deposits within arteries, leading to atherosclerosis. This arterial narrowing increases the risk of heart attacks, strokes, and peripheral artery disease (PAD).

"At the American Heart Association, we recommend that all adults 20 or older should have their cholesterol checked every four to six years as long as their risk remains low," Dr Donald M. Lloyd-Jones, former American Heart Association volunteer president, chair of the preventive medicine department, Professor of Heart Research at Northwestern University's Feinberg School of Medicine, and a leading expert in heart research, said.

After age 40, healthcare professionals will also want to use an equation to calculate the 10-year risk of people having a heart attack or stroke; he said, "People who have had a prior heart attack or stroke may need their cholesterol checked more often."

"This is very much a case where knowledge is power. The more you know, the more you can do to decrease your risk of heart attack and stroke in the future," Dr Lloyd-Jones said.

Heart attack and stroke survivors need to grasp the profound impact of high LDL cholesterol, often called bad cholesterol, on their cardiovascular health.

Dr Donald M. Lloyd-Jones
Former American Heart Association volunteer president

According to a survey, 65% of heart attack and stroke survivors believe high cholesterol increases their risk of having a heart attack or stroke, indicating a moderate to high risk.

Emphasising that there is still a need for progress, Dr Lloyd-Jones said, "As this statistic underlines, a considerable portion of survivors require further understanding, particularly regarding the specific risk associated with LDL cholesterol. Heart attack and stroke survivors need to grasp the profound impact of high LDL cholesterol, often called bad cholesterol, on their cardiovascular health."

NCD's killing 4 crore people each year: WHO

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Noncommunicable diseases (NCDs) such as cardiovascular disease, diabetes, cancer and chronic respiratory diseases are taking the lives of 41 million people prematurely each year, and inflicting daily hardship for those at risk or living with an NCD, the World Health Organisation (WHO) said.

The WHO added that persistent action and bold leadership are needed to address this burden worldwide. The UN agency said that the Global NCD Compact 2020-2030 and Global Group of Heads of State and Government for NCDs were launched in 2022 to accelerate pro-

gress and scale up the prevention and control of NCDs toward achieving universal health coverage (UHC).

The initiative builds on the 3 UN High-level political declarations for NCDs and will galvanize momentum in the second UN High-level meeting on UHC in 2023, and towards the fourth UN High-level meeting on the prevention and control of NCDs in 2025.

The Global Group of Heads of State and Government for NCDs will convene a second annual gathering on the sidelines of the UN General Assembly in New York on September 21 to raise the priority accorded to the prevention

The continuance of NCD-related deaths, with millions of lives lost to these diseases worldwide, was one of the significant themes identified in 2021

and control of NCDs within the national and international SDG response.

The will also raise deliberate on the Global NCD Compact 2020-2030 and showcase national and international actions on NCD and the SDGs.

They are expected to discuss on how to lever-

age the collective to inspire and support global action on NCDs and the SDGs.

There will be a discussion on accelerating national action as part of the NCD Implementation Road map 2023-25.

NCDs continued to take a severe toll on global public health in 2021, posing a substantial challenge to healthcare systems and societies around the world. NCDs have steadily grown to prominence as primary causes of death and disability, encompassing disorders such as cardiovascular disease, cancer, diabetes, and chronic respiratory diseases.

The continuance of NCD-related deaths, with millions of lives lost to

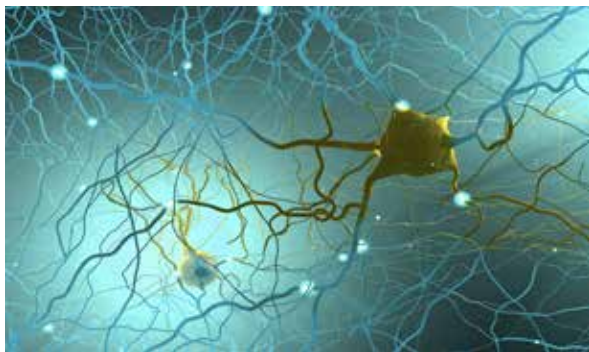
these diseases worldwide, was one of the significant themes identified in 2021. Factors contributing to this load included population ageing, increased urbanisation, dietary trends, and sedentary lifestyles. Furthermore, the ongoing COVID-19 pandemic highlighted the susceptibility of people with underlying NCDs, who were at a higher risk of severe sickness and sequelae.

Efforts to combat NCDs in 2021 took a diverse strategy. Experts continued to underline the importance of prevention by promoting healthier lifestyles through initiatives. Regular physical activity, balanced eating, quit smoking and moderate alcohol consumption through these efforts.

US scientists discover new immune cells that can slow Alzheimer's disease

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In a significant development, scientists at Tennessee-based St. Jude Children's Research Hospital discovered a subpopulation of immune cells that appear to inhibit the buildup of beta-amyloid plaques, a set of larger proteins found in the fatty membrane surrounding nerve cells, as well as the critical proteins involved in the process, in a study published recently in the journal Nature Immunology.



They typically think of the immune system as being involved in defence from bacterial or viral infection, though there is growing interest in the role of the immune system in neurodegenerative diseases.

"We uncovered an important immune cell communication axis that is protective in an Alzheimer's disease model," he added. Pointing out that microglia are immunological cells in the brain that remove beta-amyloid plaques, the researchers said that with the progression of the disease, microglia may lose their ability to clear these plaques, resulting in the production of inflammatory mediators that may increase beta-amyloid plaque formation.

The researchers said that they have discovered

that increasing another type of immune cell called CD8+ T cells is critical for slowing this process by interacting with microglia.

They further said that, in turn, this connection proved critical for limiting beta-amyloid accumulation and preserving cognitive capacities in a mouse model of the disease.

"Our paper is the first to demonstrate that a subpopulation of CD8+ T cells can be protective in a mouse model of Alzheimer's disease," said co-first author Dr Wei Su, at St. Jude Department of Immunology.

"Moving forward, we may be able to extend this work to find an effective intervention for neurodegenerative diseases," he added.

cells play a complex role in Alzheimer's disease, with some inflammatory T cells worsening the condition. However, St. Jude scientists found CD8+ T cells with suppressive features accumulate in mouse models and Alzheimer's patients, highlighting their complex role.

"We showed that CD8+ T cells can play a protective role against Alzheimer's disease pathogenesis, although there is also evidence for a contributing role," corresponding author Dr Hongbo Chi said.

"Our results demonstrate the need to better understand these complex neuro-immune interactions to improve outcomes for this neurodegenerative disease," he added.

The St. Jude group discovered a molecular interaction between CD8+ T cells and microglia, revealing that the surface protein CXCR6 on CD8+ T cells interacts with the microglial protein CXCL16.

The researchers noted that the CXCR6 and CXCL16 surface proteins communicate like a handshake between cells, trans-

mitting information in both directions, similar to how a human handshake can convey information.

"We found CD8+ T cells use CXCR6 to interact with CXCL16 from microglia," Chi said.

"Moreover, CD8+ T-cell accumulation, localization, and function in the brain are regulated by CXCR6," he added.

The researchers found that a handshake delayed Alzheimer's disease pathologies by signalling CD8+ T cells to stop uncontrolled inflammation in microglia, slowing plaque growth and symptoms in mouse models.

The researchers deleted the CXCR6 gene in mice and found that this led to a worsening of Alzheimer's disease symptoms due to CD8+ T cells not accumulating in the brain and not acquiring suppressive function.

Dr. Chi pointed out that the study had generated two significant findings and said, "One is the crucial role of CD8+ T cells in maintaining homeostasis of the brain, thereby providing a protective role in Alzheimer's disease."

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30K European doctors call for climate action to protect lungs

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In a report published in the European Respiratory Journal, the researchers, on behalf of the European Respiratory Society (ERS), representing over 30,000 pulmonary specialists from 160 countries, urged the European Parliament and government to take action to minimise greenhouse gas emissions (such as carbon dioxide, nitrous oxide, etc.) and reduce the impact of climate change on patients with lung diseases.

In the report, researchers revealed that climate change, including heat waves, wildfires, and flooding, increases air pollution and can cause airborne allergies and other lung conditions such as

asthma and chronic obstructive pulmonary disease (COPD) in millions of people worldwide, especially babies, young adults, and senior citizens.

Researchers noted that the European Union's (EU) air quality standards for fine particulate matter (PM 2.5) and nitrogen dioxide (NO₂) are higher than the World Health Organisation's (WHO) prescribed standards on air quality.

The report revealed that in the EU, there are 25 micrograms of PM 2.5 per cubic metre and 40 for NO₂, compared to 5 micrograms of PM 2.5 and 10 in WHO guidelines. Nevertheless, the EU is in the process of revising its air quality standards.

ERS has implemented a sustainability policy to manage greenhouse gas

Climate change affects everyone's health, but arguably, respiratory patients are among the most vulnerable.

Prof. Zorana Jovanovic emissions. In 2022 and started to measure its carbon emissions and align its policies with the United Nations Sustainable Development Goals.

According to a Lancet study, pulmonary diseases are responsible for one out of every 10 deaths in Europe.

Lead author, Prof. Zorana Jovanovic Andersen, Chair of the European Respiratory So-

ciety's Environment and Health Committee and based at the University of Copenhagen, said, "Climate change affects everyone's health, but arguably, respiratory patients are among the most vulnerable. These are people who already experience breathing difficulties, and they are far more sensitive to our changing climate. Their symptoms will become worse, and for some, this will be fatal."

"Air pollution is already damaging our lungs. Now the effects of climate change are becoming a major threat to respiratory patients," she said.

She further emphasises the necessity for nurses and physicians to be aware of emerging hazards and help patients manage their suffering.

She states that health-care professionals must be able to inform patients about these risks in order to protect them from the negative impact of climate change.

Prof. Andersen highlighted the present scenario by saying, "The current limits are outdated and fail to protect the health of EU citizens. Ambitious new air quality standards would ensure cleaner air and better health for all Europeans, as well as helping to mitigate climate change crises. We urge the European Parliament to adopt and enforce safer limits without delay."

"We all need to breathe clean, safe air. That means we need action from policymakers to mitigate the impacts of climate change on our planet and our health," she added.

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Amid the ongoing deadly conflict between Sudan's military and a rival paramilitary force in eastern Sudan, the World Health Organization (WHO) has reported outbreaks of cholera and dengue fever, further exacerbating the region's existing humanitarian crisis.

WHO has documented 162 suspected cholera cases admitted to hospitals in Qadiri province and other border areas with Ethiopia. Among these cases, 80 have been confirmed, and 10 individuals have succumbed to cholera. Cholera, a bacterial infection primarily transmitted through contaminated food or water, poses a significant threat in densely populated and

dire conditions.

Responding to this crisis, the medical charity Doctors Without Borders has taken action by establishing two cholera treatment centers and deploying two mobile teams in Qadiri. Additionally, WHO and the UN refugee agency have collaboratively refurbished the cholera isolation center at the Qadiri Teaching Hospital, which serves as the main medical facility in the province. Cholera outbreaks are common in impoverished Sudan, with the last major outbreak in 2017 resulting in at least 700 deaths and over 22,000 illnesses within two months. Meanwhile, across the border in Ethiopia, a cholera outbreak since August 2022 has affected over 20,000 individuals and claimed over 270 lives in seven

regions, including areas along the Sudanese border. Additionally, dengue fever has further compounded the region's health woes, with over 500 suspected cases reported across Sudan, primarily in urban centers in Qadiri. The Sudanese doctors union has reported "hundreds" of dengue-related deaths in the eastern part of the country, describing it as a "health crisis."

As the conflict persists, the toll on civilians continues to rise, with the United Nations reporting at least 5,000 deaths and over 12,000 injuries. Furthermore, in the past five months, more than 1,200 children under the age of 5 have succumbed to a combination of measles and malnutrition in Sudanese camps, as documented by the UN refugee agency.

Japanese Scientists: Fast-acting oral vaccines on the horizon

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According to a new publication published by Oxford University Press in Biology Methods and Protocols, researchers from the Biomedical Institute, NPO Primate Agora studying SARS-CoV-2 may have created new methods to give vaccinations orally, which would be both easier to administer and more successful at combating infections.

The simplest method for neutralising viruses is to neutralise them before they reach human cells when they are just on the surface of epithelial cells that line the lungs, nose, and mouth and produce mucus. Immunoglobulin antibodies work in mucus and can prevent viral multiplication.

However, particular immunoglobulins or antibodies for a given virus must first be produced by vaccination. Vaccination that quickly creates immunoglobulin A antibodies would help prevent

Looking for a novel vaccination administration route against SARS-CoV-2 that can trigger the development of immunoglobulin A in monkeys, the researchers delivered the vaccine to the monkeys sublingually and found that the test animals produced the required antibodies against the disease with no discernible side effects.

illness.

As the coronavirus, like influenza, attacks bronchial cells, researchers believe it is critical to induce virus antigen-specific immunoglobulin A secretion in the mucosa rather than the blood.

According to them, vaccines delivered via other methods, such as nasal or oral, have recently been created by scientists and are more efficient than traditional subcutaneous shots at eliciting immunoglobulin A.

However, in the case of nasal vaccines, doctors have discovered that they have negative effects on

the central nervous system or the lungs, such as headaches and fever.

Looking for a novel vaccination administration route against SARS-CoV-2 that can trigger the development of immunoglobulin A in monkeys, the researchers delivered the vaccine to the monkeys sublingually and found that the test animals produced the required antibodies against the disease with no discernible side effects.

This means that, with additional research, clinics may soon be able to offer oral coronavirus vaccines, which would be

more popular and effective against the disease, the researchers noted.

Pointing out that the efficacy of the sublingual vaccine was examined using *Cynomolgus* macaques, the researchers said that they divided nine monkeys into three groups of three animals: control [just 400 mg poly(I: C) per head], low dose [30 mg RBD and 400 mg poly(I: C) per head], and high dose [150 mg RBD and 400 mg poly(I: C) per head], respectively.

Researchers utilised N-acetylcysteine, a moderate reducing agent that lowers mucous barrier loss, to improve vaccine distribution to mucosal immune cells.

However, noting that the study is yet to examine the exact safety and efficacy using genomic markers described in previous papers in mice, the researchers said that further studies on these points are in progress using the preclinical non-human primate model.

Eco-friendly environment increases a baby's birth weight

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Women living in environmentally friendly areas give birth to healthy babies, which aids in mitigating the effects of air pollution, while those living in areas with high levels of air pollution give birth to smaller infants with low birth weights, researchers of a recent study reported.

This study is part of a Life-Gap (Lifespan and inter-generational respiratory effects of exposures to greenness and air pollution) research programme and demonstrated the correlation between birth weight and lung health. European researchers found that infants with a low birth weight are more likely to develop lung diseases like asthma and chronic obstructive pulmonary disease (COPD).

In order to protect infants from serious lung diseases, the researchers advise decreasing air pollution and promoting greenery in cities.

In this study, scientists evaluate the data obtained from a study known as Respiratory

Health in Northern Europe (RHINE), involving 4286 participants from five European countries, including Denmark, Norway, Sweden, Iceland, and Estonia.

During the course of their study, researchers measured vegetation density using satellite images in an area where pregnant women lived. They also examined the levels of pollutants such as nitrogen dioxide (NO₂), ozone, black carbon (BC), and particulate matter (PM_{2.5} and PM₁₀).

Researchers also investigated factors affecting birth weight, including the mother's age, smoking habit, and overall health condition.

The study findings showed that air pollutants NO₂, PM_{2.5}, PM₁₀, and BC decrease birth weight by 48g, 56g, 46g, and 48g, respectively. However, women from eco-friendly areas have high birth weights (on average, 27 g heavier).

Lead author, Robin Mzati Sinsamala, Department of Global Public Health and Primary Care at the University of Bergen (UiB), Norway, said,

The study findings showed that air pollutants NO₂, PM_{2.5}, PM₁₀, and BC decrease birth weight by 48g, 56g, 46g, and 48g, respectively.

"The time when babies are growing in the womb is critical for lung development. We know that babies with lower birth weights are susceptible to chest infections, and this can lead to problems like asthma and COPD later on."

"Our results suggest that pregnant women exposed to air pollution, even at relatively low levels, give birth to smaller babies. They also suggest that living in a greener area could help counteract this effect. It could be that green areas tend to have lower traffic or that plants help to clear the air of pollution, or green areas may mean it's easier for pregnant women to be physically active," he added.

A report from the European Respiratory Society estimates that in the European Union (EU), around 6 million hospitalisations and two-thirds of a million deaths due to lung disease are reported every year.

The European Respiratory Society Advocacy Council Chair, Professor Arzu Yorgancioglu, emphasises the research by saying, "This study adds to a growing body of evidence on the damage that air pollution is having on our health, especially in vulnerable babies and young children. Women who are pregnant will want to protect their babies from potential harm. However, as individuals, it can be difficult to reduce our exposure to air pollution or make our neighbourhoods greener."

"As doctors and researchers who care about children's health, we need to put pressure on governments and policymakers to lower the levels of pollution in the air we breathe. This study also suggests that we could help mitigate some of the effects of pollution by making our neighbourhoods greener." She added.

WHO Chief applauds G-20's universal health pledge

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The Director General of the World Health Organisation (WHO) has welcomed the New Delhi Declaration issued during the recently concluded G-20 Summit in New Delhi.

In his opening remarks during the recent media briefing in Geneva, the WHO Director-General said that by representing the world's largest economies, the G20 plays a critical role in global development and global health.

"I welcome the Leaders' Declaration, which highlights a range of critical health issues," he declared.

Pointing out that G20 leaders reinforced their commitment to achieving universal health coverage and to adopting a One Health approach, recognising that the health of people and the planet are inseparable, Dr Tedros said that the Summit also



recognised the role of traditional medicine and welcomed the establishment of the WHO Global Initiative for Digital Health.

Informing the media that the next United Nations General Assembly meeting will feature three high-level meetings on health issues for the first time, the WHO Director-General said, "The first high-level meeting, next Wednesday, is on pandemic prevention, preparedness, and response."

Pointing out that the outcome will be a political declaration that aims at mobilising political will and strengthening the gov-

ernance, financing, and systems for global health security, he said, "The declaration will support the member state negotiations on the pandemic agreement and the amendment of the International Health Regulation 2005."

Giving details of the second high-level meeting on universal health coverage, Dr Tedros said that the members will, given the commitment to achieve by 2030 in the Sustainable Development Goals, take stock of the current state of progress.

He further said that the COVID pandemic has further slowed progress, but

it underscores the importance of equitable access to essential health services without financial hardship.

In his remarks, Dr Tedros, on behalf of WHO, asked the countries to focus on protecting health investments, reorienting health systems towards primary care, promoting health, preventing diseases, providing necessary services, and empowering individuals to take control of their health.

"We understand that budgets are squeezed. But investments in primary health care are the most cost-effective because they can help prevent or delay the need for more costly secondary and tertiary care," he added.

Dr Tedros further urged countries to take ambitious measures to protect vulnerable populations from catastrophic health costs and urgently double the health and care workforce, particularly at the community level.

56% of seniors unaware of glaucoma, say researchers

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In a new study, Swedish researchers from the University of Gothenburg demonstrated the incidence and risk factors associated with open-angle glaucoma in elderly people aged 70 and older. Researchers state that open-angle glaucoma often goes undiagnosed in older adults.

Researchers mentioned that 4.8% of patients had pre-existing glaucoma, and 56% had undiagnosed glaucoma.

In this cohort study, a total of 1203 participants were enrolled. Researchers analysed the questionnaire responses from 1182 participants regarding their self-reported glaucoma and examined the patients for blood pressure

(BP) and diabetes.

They conducted an ophthalmic evaluation of 560 patients, including best-corrected visual acuity (BCVA), intraocular pressure (IOP), central corneal thickness (CCT), contrast sensitivity (CS), perimetry, and images of the retina and lens.

After analysing the questionnaire responses, Swedish scientists found that 4.8% of patients had pre-existing glaucoma, and 56% of the participants had previously undetected glaucoma.

A large portion of non-glaucoma patients had high blood pressure (above 90 mm Hg), compared to 0% in the glaucoma group. 39% of participants had a family history of glaucoma, compared to 1.1% of non-glaucoma patients.

In two-thirds of patients with prior undiagnosed glaucoma, the researchers found that intra-ocular pressure was 21 mm Hg, and the best corrected visual acuity (BCVA) was lower in comparison to the non-glaucoma patients.

Findings from optical inspection demonstrated that 2.1% of participants had glaucoma and 2.7% had prior undetected glaucoma.

They further found that most of the patients had glaucoma in one eye, while 22% of participants had bilateral glaucoma.

Glaucoma is an eye condition caused by high intraocular pressure due to a damaged optic nerve.

As per a recent study published in *Cureus*, open-angle glaucoma is the second leading cause

of irreversibly blindness among elderly population worldwide.

Approximately 57.5 million individuals in the world suffer from open-angle glaucoma.

Dr Lena Havstam Johansson, University of Gothenburg in Sweden, said, "The majority of the newly discovered glaucoma cases had normal intraocular pressure levels (i.e., about 21 mm Hg), leading to a higher risk of not being diagnosed."

According to her, because most subjects had unilateral disease, visual function (i.e., BCVA in the best eye) did not differ between patients with glaucoma and nonglaucomatous participants, implying that in the majority of glaucoma cases, visual-related quality of life may not be affected.

Swedish researchers find new indicator for Parkinson's

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The increased level of DOPA decarboxylase (DCC), a lyase enzyme that catalyses the joining of specified molecules or groups by a double bond, can serve as a new biological indicator for Parkinson's disease and dopamine deficiency disorders, say Swedish researchers.

Researchers from Lund University, Sweden, noted that the DOPA decarboxylase (DCC) level is higher in patients with Parkinson's disease and other brain disorders that cause dopamine deficiencies.

However, the DCC level is normal in Alzheimer's disease. Additionally, an increased level of DCC was observed in Parkinson's patients years

prior to the onset of symptoms.

In the study published in the journal Nature Aging, researchers investigated data from 248 participants.

They analysed the blood plasma samples obtained from 174 patients and demonstrated a significant increase in a new biological indicator in the blood.

They also confirmed their findings in another group involving 152 patients.

The dopamine system injury in the brain can be identified by a PET camera test, but it is a very expensive and complex technique that can only be performed in specialised memory clinics.

Parkinson's disease is a neurological ailment characterised by nerve cell degradation in a spe-

cific region of the brain, resulting in uncontrolled movements of the hands, arms, and legs, loss of balance, depression, and muscle stiffness.

A report published by the World Health Organisation (WHO) reveals that in 2019, Parkinson's disease was responsible for 329,000 deaths and 5.8 million disability-adjusted life years.

Pointing out the research, Prof. Oskar Hansson, of Lund University and a consultant at the Skane University Hospital, said, "We have used advanced techniques that allow us to measure thousands of proteins simultaneously in a small amount of sample. We conducted this in 428 individuals to identify biomarkers that can indicate whether a patient with motor disturbances or cognitive diffi-

A report published by the World Health Organisation (WHO) reveals that in 2019, Parkinson's disease was responsible for 329,000 deaths and 5.8 million disability-adjusted life years.

culties has damage to the dopamine system in the brain."

He mentioned that the study shows that patients with dopamine system disorders have higher levels of DDC biomarkers in their blood, regardless of the patient's stage of the disease. This indicator is detectable in blood, particularly in Parkinson's disease.

Prof. Hansson said, "Since the symptoms of

various neurodegenerative brain diseases resemble each other, there is a significant risk of misdiagnosis and thus improper treatment. Therefore, it is crucial to find safer diagnostic tools and methods, and we are focusing on that in our research.

"Moreover, I believe that in the future, different brain diseases will be treated even before the symptoms become apparent, and blood markers

will be essential in identifying the right individuals in a simple and cost-effective manner," he added.

According to World Health Organisation, in the last 25 years, the number of people worldwide with Parkinson's disease (PD) has doubled.

This means there are now more than 8.5 million individuals living with PD around the globe.

Sadly, the effects of PD, including disability and even death, are increasing more rapidly than for any other brain-related condition.

To put it into numbers, in 2019 alone, PD caused 5.8 million years of disability-adjusted life, which is an 81% increase since 2000.

PD is a brain disorder that gets worse over time. It comes with motor symptoms like slow

movement, tremors, stiffness, and difficulty walking.

But it doesn't stop there. PD also brings along a bunch of non-motor problems, including issues with memory, mental health, pain, and even how our senses work.

These motor and non-motor symptoms can make life very challenging. They affect everything, from how we move and speak to our overall quality of life.

As PD progresses, it can lead to involuntary movements (called dyskinesias) and painful muscle contractions (dystonias).

These can seriously limit our ability to speak, move, and perform everyday tasks. And as a result, people with PD often need a lot of care and support. It's not just

tough on them; it's also hard on their caregivers who experience stress and burdens.

Not everyone with PD has access to the same level of care and treatment. In fact, there's a big gap between high-income countries and low- and middle-income countries (LMIC).

In countries with lower incomes, there are far fewer neurologists available to help people with PD.

There are just 0.03 neurologists for every 100,000 people in low-income countries. In contrast, high-income countries have 4.75 neurologists for every 100,000 people.

This inequality means that many people in LMIC may not be getting the care and support they need to manage PD effectively.

Study: Optical and ultrasound for stent guidance equal

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In a comparative study presented during the recently concluded ESC Congress 2023 of the European Cardiology Society, it was said that intravascular ultrasound (IVUS), which uses sound waves to evaluate soft tissue and capture real-time images of blood vessels, arteries, and veins close to the heart, and optical coherence tomography (OCT), a non-invasive imaging test, work equally well for guiding percutaneous coronary intervention (PCI), a non-surgical, invasive treatment intended to reduce coronary artery constriction and enhance blood flow to ischemic tissue.

The researchers noted that IVUS and OCT are increasingly used to direct PCI procedures

and noted that while both imaging modalities can be used to evaluate target lesion characteristics, optimise stent implantation, and reduce stent-related complications, their relative efficacy has not yet been determined.

The trial, an investigator-initiated, prospective, multicenter, randomised, open-label study that took place across nine South Korean sites, enrolled patients aged 19 and up who were receiving PCI for severe coronary artery lesions with modern drug-eluting stents or drug-coated balloons.

Post-angiography tests, 2,008 patients of 64.7 years of average age, of whom 33.4% had diabetes, 76.6% had stable ischemic heart disease, and 23.4% experienced acute coronary syndrome, were ran-

domly assigned to the IVUS and OCT groups in a 1:1 ratio, the researchers said.

The primary endpoint of the trial was a composite of cardiac death, target vessel myocardial infarction, or ischaemia-driven revascularization at one year, with the OCT group compared to the IVUS group, which showed that both of them worked equally well.

One year after randomisation, the primary endpoint had occurred in 25 of 1,005 patients (2.5%) in the OCT-guided PCI group and 31 of 1,003 patients (3.1%) in the IVUS-guided PCI group, they added.

The researchers found that the incidence of contrast-induced deterioration of kidney function was similar in both the OCT and IVUS groups.

However, they said

that major procedural complications were lower in participants in the OCT group compared to those in the IVUS group.

Commenting on the STDY findings, the principal investigator, Professor Duk-Woo Park of Asan Medical Centre, Seoul, said: "Among patients undergoing PCI for diverse coronary artery lesions, OCT-guided PCI was non-inferior to IVUS-guided PCI concerning a composite of death from cardiac causes, target vessel myocardial infarction, or ischemia-driven target vessel revascularization at 12 months after the index procedure."

"The primary results of OCTIVUS add compelling evidence to the relative efficacy and safety of an OCT-guided strategy compared with an IVUS-guided strategy for PCI," he added.

Sleep-Wake therapy, a new hope for teen depression

Vasu Goyal
London

Researchers at the University of California, San Francisco, have discovered a strategy to help young children who fall asleep and wake up late, the so-called "night owls," conform to their normal sleep-cycle cycles while still completing their schoolwork. The findings are encouraging for depressed teenagers, who are more likely than others to report staying up late.

The findings of the study, published recently in the Journal of Child Psychology and Psychiatry, involved 42 clinical depression participants from 176 night-owl adolescents and found that 24 received the Transdiagnostic Sleep and Circadian Intervention, 18 received educational sessions, and 45 received 45-minute weekly therapy sessions.



Commenting on the findings, Dr Lauren Asarnow, a clinical psychologist with UCSF Health who specialises in sleep health, said, "A big finding here is that there is a subgroup of teens for whom treating sleep is particularly important for improving depression symptoms."

"And the other big finding is that they really need to be able to live a life that is more in line with their sleep-wake biology," he added.

The study examined data from 42 clinically depressed individuals

who had taken part in a broader study of 176 late-night teenagers. Of these teenagers, twenty-four had the Transdiagnostic Sleep and Circadian Intervention (TransS-C), and 18 underwent instruction in how to live a healthy lifestyle. All participants wore gadgets that tracked their sleep patterns and kept sleep diaries. Additionally, they received weekly 45-minute therapy sessions for eight weeks.

At the outset of the trial, all the teens had a Children's Depression Rating Scale score of at least 40, indicating clinically significant depression.

The study also discovered that remission is indicated by a score of 28 or below, with the intervention group's average score dropping to 21.67 six months after therapy, compared to 32.5 for the healthy living intervention group.

The intervention scored 24.97 after 12 months of treatment, whereas the controls scored 32.75, the researchers noted.

About three million adolescents have at least one major depressive episode in a given year, and about 40% did not respond to treatment. "There is a saying in our psychology and psychiatry clinics that the best treatment for depression and anxiety is summer break," Asarnow said.

"We need to stop calling these kids 'lazy.' A lot of the time, it is just their biology. It is not their fault," he asserted.

Omega-3 supplement claims are vague and lack data, say US researchers

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Supplements containing omega-3 fatty acids, essential for maintaining healthy cell membranes, supplying energy, and performing a variety of functions in the heart, blood vessels, lungs, immune system, and endocrine system, may not give the predicted health advantages due to a lack of clinical evidence, researchers of a University of Texas Southwestern Medical Centre study said.

According to experts, omega-3 fatty acids, including alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), are critical for the health of the body's membranes and energy generation.

Plant oils, including flaxseed, soybean, and canola, are high in ALA, while fish and seafood are high in DHA and EPA.

As the body cannot generate ALA, the only realistic approach to increasing amounts is through foods and supplements. Omega-3 fatty acids are

Extensive research has shown that for most people, there is no cardiovascular benefit in taking over-the-counter fish oil supplements, and at high doses, they can even increase the risk of atrial fibrillation.

Dr Ann Marie Navar
Associate Professor
UT Southwestern

about 20% of Americans over the age of 60 take fish oil supplements, often because they think it is helping their heart, Dr. Ann Marie Navar, Associate Professor of Internal Medicine in the Division of Cardiology and a member of the Peter O'Donnell Jr. School of Public Health at UT Southwestern, who led the study, said, "Extensive research has shown that for most people, there is no cardiovascular benefit in taking over-the-counter fish oil supplements, and at high doses, they can even increase the risk of atrial fibrillation."

Analysing data from fish oil supplement labels obtained from the National Institutes of Health Dietary Supplement Label Database, the researchers found that of the 2,819 labels studied, 2,082 (73.9%) made at least one health-related claim.

They additionally found that most supplements with a health claim on the label (80.3%) used what is known as a structural or function claim, designed to describe the influence of the nutrient on a biological system in broad terms.

Structure and function claims are allowed by the FDA, but can be vague and misleading," said Dr. Navar, a board-certified cardiologist.

"And they are being made from fish oil for

many organ systems, including the heart, brain, joints, eyes, and immune system," he added.

Stressing that structure or function claims can include statements like 'supports cognitive health' or 'supports healthy joints,' Dr Navar said, "Technically, these cannot be used to claim that the supplement treats or prevents a disease, but we feel that this type of language can be very confusing to consumers who may be unaware these statements do not require support from randomised trials."

Researchers also compared the levels of two essential omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), in 255 fish oil pills from 16 top brands. These omega-3 fatty acids can be used to decrease triglycerides in select people with very high triglyceride levels (over 500 milligrams per deciliter), a daily dose of two grammes or more is necessary.

According to the study, only 24 (9.4%) of the 255 supplements contained a daily amount sufficient to decrease triglycerides. Furthermore, the dosage

of EPA and DHA varied significantly among brands.

"Triglyceride lowering on its own does not prevent heart disease, but some people with very high triglycerides at risk for pancreatitis may be recommended to take fish oil," Dr Navar said.

"In this case, doctors should be specific about the dose of omega-3 recommended, and patients should read the labels carefully to be sure they are getting the right amount," he emphasised.

The study suggests that stricter regulations on dietary supplement labelling may be needed to prevent consumer misinformation.

"Supplement labelling can be confusing even for the savviest consumers," said Joanna Assadourian, the first author of the study and a fourth-year UT Southwestern medical student.

"Patients should talk to their doctor about what supplements they are taking and why they are taking them; they may be surprised to learn they are not getting the health benefits they think they are," she added.

"Cyberbullying leads to eating disorders in both victims and perpetrators"

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A study involving 10,258 adolescents aged 10-14 who answered questions about cyberbullying victimisation and perpetration, published in the International Journal of Eating Disorders, recently found that both victims and offenders of cyberbullying were more likely to experience eating disorder symptoms than other children.

Defined as "an aggressive, intentional act carried out by a group or individual using electronic forms of contact repeatedly and over time against a victim who cannot easily defend himself or herself," cyberbullying is fast emerging as a severe public health concern because of its rising frequency among adolescents and its influence on adolescent mental health, particularly disordered eating behaviours, researchers say.

According to a study by researchers at the University of California, compared to uninvolved

children, both victims and perpetrators of cyberbullying report more mental health problems.

They point out that early adolescent screen time consumption is highest and cyberbullying is most common, with around one in every five early adolescents in the United States reporting cyberbullying involvement.

According to available data, India ranked first in cyberbullying in 2018, with 37% of parents reporting it, followed by Brazil (29%), and the United States (26%). Since then, incidences have increased, with 90% of US students recognising cyberbullying as a problem, with 15% preferring to keep the issue private.

Moreover, cyberbullying is roughly twice as likely to lead to a teenager dying by suicide, while 37% of victims suffer from social anxiety.

Data further revealed that 59% of teenagers in the United States have experienced online bullying, with 14.5% of youngsters

aged 9 to 12 saying they have been cyberbullied.

The study found that cyberbullying victimisation leads to weight gain anxiety, self-worth tying to weight, inappropriate compensatory behaviors, binge eating, and binge eating distress, while cyberbullying perpetration leads to weight gain anxiety, self-worth tying to weight, and binge eating distress. Commenting on the study findings, senior author Dr Jason M. Nagata of the University of California, San Francisco, said, "Adolescents experience cyberbullying related to appearance and weight."

Pointing out that cyberbullying can lead to lower self-esteem, body dissatisfaction, and developing eating disorders, he added, "Adolescents should limit social media that encourages eating disorders and appearance comparisons."

He further asked parents to advise their children to avoid cyberbullying and encourage them to report online harassment if it occurs.

Scientists find potential treatment to manage AD

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In a major development to combat Alzheimer's disease (AD) and reduce its societal burden, scientists from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) have found that highly abundant naturally occurring plant-based polyphenols (PPs) including tannic acid found in twigs of trees can modulate the ferroptosis-ADD axis to yield a safe, cost-effective strategy.

It may be noted that AD is a widely prevalent progressive neurodegenerative disorder marked by memory and cognitive decline, yet it remains poorly understood despite decades of dedicated research.

The scientists pointed out that as a consequence of this, there is no therapeutics to completely cure the disease. Ferroptosis, an iron-dependent form of programmed cell death, has emerged as a significant contributor to the development of AD.

They added that several hallmarks of AD, such as abnormal iron build up, lipid peroxidation, reactive oxygen species (ROS), and reduced activity of the antioxidant enzyme glutathione peroxidase 4 (GPX4), align with the characteristics of ferroptosis.

The scientists stressed that GPX4, the master

regulator of ferroptosis reduces toxic lipid peroxides formed by the iron-catalysed reaction of polyunsaturated fatty acids (PUFAs) with ROS to lipid alcohol and as such, acts as a first line of defence against ferroptosis.

This is called the GPX4 pathway. While conventional approaches to combat ferroptosis have primarily focused on chelating iron and neutralizing ROS, the potential therapeutic strategies that target GPX4 pathway to alleviate ferroptosis in AD have remained unexplored.

GPX4 protein synthesis in itself is an energetically demanding, low efficiency process, and therefore, molecules that can activate and elevate GPX4 levels might be the key to prevent oxidative stress implicated in chronic disorders.

Study by scientists of JNCASR, an autonomous institute of the Department of Science and Technology (DST) presents naturally occurring polyphenols (PPs) as innovative and multimodal therapeutic agent with dual capabilities to ameliorate ferroptosis and AD. The underlying mechanisms involve the inhibition of aggregation of amyloid (abnormal fibrous, proteinaceous deposits found in organs and tissues) and tau protein (abundantly found in the neurons of the central nervous system), diminishing oxidative stress, rescuing mitochondrial function,

and inhibiting ferroptosis.

Their study has demonstrated that the natural polyphenol, tannic acid (TA) could act as both an

TA as a ferroptosis inhibitor acting via both activation and enhancement of GPX4 presents holistic strategy against AD

activator and enhancer of GPX4. This novel approach provides a conceptually advanced and comprehensive strategy for combating AD by modulating the GPX4-ferroptosis-AD axis.

The ability of TA to elevate GPX4 levels even in the presence of AD pathological conditions offers exciting new avenues for targeting novel pathways in the aetiology of AD while holding promise for tackling the intricate interplay between ferroptosis and AD.

The study published in the journal Chemical Sciences which steers research toward ferroptosis inhibitors presents a new dimension for drug development. This discovery may inspire medicinal chemists to explore new and derivatives of natural compounds to

enhance therapeutic efficacy against AD.

With a rationale of targeting both AD and ferroptosis concurrently, the team screened a library of natural polyphenols for their Fe-chelation and antioxidant abilities and singled out tannic acid as a multifunctional molecule exhibiting excellent potencies in all aspects, already establishing it as a potent candidate for mitigating several pathways of AD and ferroptosis.

The discovery of TA as a ferroptosis inhibitor acting via both activation and enhancement of GPX4 presents an innovative and holistic strategy against AD. This has also established a mechanistic link between AD and ferroptosis, which had so far remained elusive.

The discovery of a natural polyphenol, TA as a GPX4 activator that ameliorates Aβ induced ferroptosis holds great significance and this study presents new opportunities for the synergistic inhibition of ferroptosis in AD.

By unravelling the complexities of AD and ferroptosis, the research not only addresses specific neurological challenges but also contributes to scientific knowledge, validating new disease mechanisms, global health, and the well-being of dementia patients while inspiring researchers to seek this alternative axis for therapeutic avenues for neurodegenerative diseases.

Sepsis may see breakthrough with new test in ERS: Study

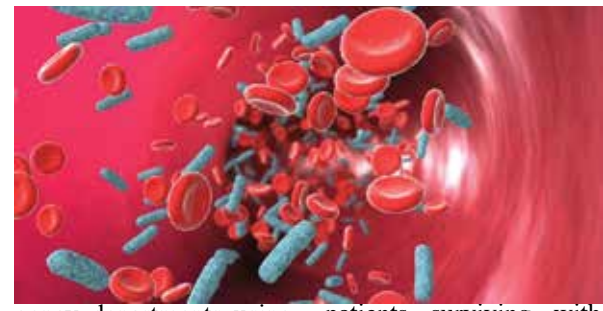
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Sepsis, a potentially fatal infection-related illness that can quickly lead to organ failure, kills over 350,000 lives in the United States alone each year. It is crucial to correctly diagnose sepsis in emergency room service (ERS) since it can mean the difference between life and death.

When patients with higher sepsis risk factors, such as older persons or those with chronic health conditions, present to the emergency room, clinicians evaluate them for sepsis. Because at present, there is no conclusive test for sepsis, doctors must rely on their clinical judgment to identify signs of infection and inflammation associated with the syndrome.

A new blood test for sepsis could save lives and decrease expenses, according to a study led by Christopher Hollenbeak, a health policy and administration professor at Penn State College of Health and Human Development and published recently in Critical Care Explorations.

The IntelliSep test analyses changes in a patient's white blood cells to determine their risk of sepsis. Hollenbeak and his colleagues examined the economic consequences of utilising the IntelliSep test in emer-



gency departments using decision modelling.

Hollenbeak underlined that decision modelling is objective, offering simple facts on the costs and benefits of implementing a healthcare innovation. In the case of the sepsis test, its application may save lives.

The company developing IntelliSep, Cytovale, worked with Hollenbeak to undertake this analysis, which is common in health economics. After a medical innovation has been determined to be safe and effective, health economists evaluate whether the benefits outweigh the costs.

Researchers compared data from a trial of the IntelliSep test to data from another sepsis-indicator test based on procalcitonin levels for their analysis. While procalcitonin testing is available and has been used to diagnose sepsis, it only reveals infection and does not indicate the related inflammation.

According to the study's findings, IntelliSep surpassed procalcitonin testing, potentially resulting in over 95% of

patients surviving with a treatment costing less than \$4,000 per person, a slightly greater survival rate, and a cheaper cost when compared to procalcitonin testing.

The cost reductions are mostly due to more accurate sepsis diagnosis, as untreated sepsis can result in high treatment costs and an increased risk of mortality.

However, Hollenbeak cautioned that the IntelliSep test should be used in conjunction with therapeutic care rather than in place of it. Instead, it gives clinicians crucial diagnostic information, assisting them in making informed decisions in the face of uncertainty and potentially saving lives and healthcare expenses.

Sepsis is a major global health issue that causes severe sickness, mortality, and financial burden on healthcare systems. According to a recent report by a global task committee, sepsis is a condition in which the body's response to an infection causes life-threatening organ failure. This definition emphasises the organ damage produced by sep-

sitis but does not identify the source of the infection, which might be any systemic infection. When estimating the global disease burden, sepsis should be recognised as a separate contributor to sickness and death.

According to a 2020 study published in Critical Medical Care the number of people who went to the hospital with a sepsis diagnosis in Medicare (a healthcare program for older adults) went up from 800,000 in 2012 to 1.1 million in 2018. This increase was faster than the growth of the Medicare population.

The study further found that the total cost of hospital stays for people with sepsis went up from \$17.8 billion to \$21.7 billion. The cost of care in nursing facilities for 90 days after a hospital stay for sepsis went up from \$4.0 billion to \$5.5 billion during the period.

When added up all the costs for hospital stays and nursing facility care for people in Medicare, it went up from \$27.1 billion in 2012 to \$39.3 billion in 2018.

The report further pointed out that even though fewer people died from sepsis over time, the numbers are still very high: about 60% of people with septic shock, 40% with severe sepsis, and 27% with unspecified sepsis passed away within six months.

Rare Disease

HANHART SYNDROME

Hanhart syndrome or aglossia-adaactylia is a rare condition that affects how the arms, legs, mouth, and jaw develop. It's part of a group of conditions called oromandibular-limb hypogenesis syndromes (OLHS). People with Hanhart syndrome may have shorter or missing tongue and fingers or toes. Doctors first identified this condition in 1932, and it got its name from Dr. Hanhart, who studied three children with tongue and limb problems in 1950.

SIGN AND SYMPTOMS
Patients with Hanhart syndrome may experience craniofacial abnormalities like a small mouth (microstomia), small lower jaw (micrognathia), undeveloped tongue (hypoglossia), cleft palate, cleft tongue, wide nose, increased eyelid distance (tel-

ecanthus), lower eyelid defects, asymmetrical facial features, and mandibular hypodontia (absence of teeth in the mandibular region of the jaw). Some children may have malformations like missing fingers or toes, deformed lower arms or legs, or asymmetrical limbs. The patient with Hanhart syndrome may have motor function loss in the face due to a problem with nerve pairs in the brain. Sometimes, when a baby is growing inside the mother, the spleen (an organ in the belly) and the gonads (reproductive organs) can stick together, which is called "splenogonadal fusion." This can cause problems like lumps in the testicles and other body malformations. Some of these problems might include funny-shaped feet, missing kidneys, cysts in the brain and near the anus, and blockages in the middle of the small intestine.

Some people with this condition might also have trouble with their thinking and learning abilities, which we call "intellectual disabilities." The problems can differ in each person, and some might have more severe issues than others.

CAUSES
Although the actual cause of Hanhart syndrome is unidentified, some research shows that this condition may be inherent as a recessive disorder, in which patients get two copies of the same abnormal gene from each parent for the same trait. When people inherit one normal gene and one abnormal gene for certain diseases, they become called "carriers" of the disease. Usually, carriers don't have any symptoms of the disease themselves. But when two carriers have a child together, there are

different possibilities for the child's genes. There's a 25% chance that the child will inherit two abnormal genes and have the disease. There's a 50% chance the child will also be a carrier like the parents. And finally, there's a 25% chance the child will inherit two normal genes and not have the disease or be a carrier. This condition can cause a hemorrhagic lesion or disruption of blood flow in the embryo and lead to developmental abnormalities. Exposure to certain drugs during pregnancy or the death of the embryo derived from the same fertilised egg may cause blood flow impairment.

AFFECTED POPULATION
Hanhart syndrome is a rare condition that affects both men and women. There were only 30 reported cases of this syndrome

between 1932 and 1991. It is prevalent in children and affects 1 in every 20,000 children.

DIAGNOSIS
In infants, this condition is diagnosed by a comprehensive clinical evaluation and physical examination.

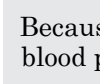
TREATMENT
Abnormalities associated with the mouth, tongue, and jaw can be treated with surgery, artificial devices or prostheses, and physical treatment. Speech therapy can help patients with mouth and tongue deformities. Limb abnormalities can be treated with surgery, prostheses, physiotherapy, special help, and education. Other treatments like social support, vocational, educational, occupational, and genetic counselling may help the patient.

Contributed by: Sailee Rangnekar

Jokes



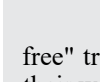
Why did the heart patient bring a ladder to the doctor's office?



Because they heard it's good for those "high blood pressure" moments!



Why did the cancer patient bring a suitcase to the chemotherapy session?



Because they heard it was a "baggage-free" treatment, and they were determined to leave their worries behind and embrace life's journey with a smile.

Laughter may not cure cancer, but it sure can lighten the load on the road to recovery!



On her first night taking care of an elderly patient, something funny happened to Linda, a nurse.

When it was time for him to sleep, she moved his chair as close to the bed as she could. She tried to use the techniques she learned in school to pick him up and put him in bed. But Linda couldn't quite get him onto the mattress. So, she tried again, using all her strength to lift him onto the bed. Later, when the nurse who works the night shift arrived, Linda told her what had happened. The other nurse seemed puzzled and said something amusing. She said, "Funny, I usually just ask him to hop into bed, and he does it without any trouble."



As a brain wave technologist, Smith ensures postoperative patients maintain a smile after brain surgery. However, a colleague suggested a new approach: asking patients to "show Smith their teeth." Smith tried this, asking his next patient, Tony, to show him his teeth. To his surprise, Tony replied, "Oh, the nurse has them!" This unexpected twist of medical humor highlights the importance of a smile in postoperative care. This new approach has helped Smith maintain a positive attitude and encourage patients to smile even after undergoing brain surgery.

Sudoku

8	6	1						
		3	6	4		9		
9					8	1	6	
	8		3	9	6			
7	2		4		3		9	
			5	7	2		8	
5	2	1						4
	3		7	5		2		
			2		1		5	

Amazing Facts

- A 2019 meta-analysis found that infants with every additional kilogram of birth weight had a 44% increased predisposition to childhood food allergies, suggesting that the susceptibility to specific allergens may be linked to birth weight.
- The circulatory system is composed of veins and arteries, each with their own unique function. Veins carry life's essence back to the heart, while arteries carry life force away. Veins have one-way valves, allowing blood to advance in the right direction, while arteries do not require valves. These conduits demonstrate the heart's strength, as they propel blood in a torrential surge, a testament to nature's engineering.
- The average adult human body contains 67 distinct species of bacteria within the belly button, showcasing the intricate worlds within us. Our skin, rumored to be a thriving ecosystem, is home to a diverse range of microorganisms, highlighting the symphony of existence within our bodies.
- The human body generates enough heat to boil half a gallon of water in half an hour, and at 98.6 degrees Fahrenheit, it can release 350,000 joules of energy per hour, equivalent to a 100-watt light bulb.

Novo Nordisk & UNICEF join hands with \$8M to combat childhood obesity crisis

Vasu Goyal
London

Danish pharmaceutical major Novo Nordisk and UNICEF announced that they have extended their long-term partnership to help prevent global childhood overweight and obesity, a public health crisis affecting millions of children globally.

In a statement, Novo Nordisk announced committing eight million US dollars to scale and accelerate efforts to create healthier environments for children through policy implementation and innovations that enable children to eat well, play, and be physically active.

In a statement, Novo Nordisk announced it is investing 8 million US Dollars over three years to create healthier environments for children through policy implementation and innovations covering at least 10 million children. The partnership is intensifying efforts in Latin America and the Caribbean, expanding to East Asia and the Pacific region, and working in

Overweight and obesity affect 40 million children under five globally and 340 million aged 5-19. Three-quarters of affected children reside in low- and middle-income countries

Mexico, Colombia, Brazil, and Indonesia.

Commenting on the partnership, Katrine DiBona, corporate vice president for Global Public Affairs and Sustainability at Novo Nordisk, said, "Childhood obesity prevention is critical as the current trajectory for obesity is unsustainable, placing increased pressure on countries across the world."

"UNICEF and Novo Nordisk believe that preventing childhood obesity is a shared societal responsibility that requires systemic change. With the expansion of our partnership, we are excited to continue our work to build healthy environments that enable and empower children to thrive," she added.

Since 2019, the collaboration has been actively working to reduce

childhood obesity through programmatic interventions, favourably influencing approximately 2.6 million Latin American and Caribbean children and carers. It has also changed legislation in Mexico and Colombia, ensuring more protection and support for child nutrition and health.

"The continuation of our partnership with Novo Nordisk supports our global prevention agenda to tackle the escalating prevalence of childhood overweight and obesity," said Victor Aguayo, Director of Nutrition and Child Development at UNICEF.

He emphasised that the partnership aims to accelerate efforts to prevent childhood overweight and obesity through systemic action in policies, programmes, and practices having a profound impact on the nutrition, growth,

and development of millions of children.

Novo Nordisk and UNICEF are partnering to strengthen food and urban systems, often impacting their health. They aim to help local and national governments implement long-term policy changes to increase access to nutritious, safe, affordable diets and physical activity opportunities.

The collaboration will also generate evidence to raise awareness and shift the narrative on childhood overweight and obesity from individual blame to structural factors, including Advocate for school food environment regulations in Brazil to prohibit harmful ultra-processed food products. Implement design innovations to monitor unhealthy food marketing for children online in Mexico. Improve urban food retail environments in Indonesia and strengthen nutrition labelling regulations in Colombia.

According to available estimates, overweight and obesity affect 40 million children under five globally and 340 million aged

5-19. Three-quarters of affected children reside in low- and middle-income countries, with Latin America, the Caribbean, East Asia and the Pacific regions having nearly half of the world's children under five living with obesity.

In India, a lot of people have a problem with obesity, which means they're very overweight. This issue is more common in certain areas. In the southern part of the country, many people are obese, while in the eastern part, it's less common.

Obesity affects more women than men and is more common in cities than in rural areas. It's also more common in people over 40 years old than in younger folks. If someone has more education, they're more likely to be obese, and if they don't move around much, like exercising, they're also at a higher risk of being obese.

Out of all these factors, not being physically active has the biggest impact on obesity. It's a stronger factor than age, education, living in a city, or being male or female.

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In an indication that exposure to certain endocrine-disrupting substances may be playing a role in promoting cancers in women, researchers discovered that people who had cancers of the breast, ovary, skin, and uterus had much greater amounts of these chemicals in their systems. While this study, published in the journal *Exposure Science & Environmental Epidemiology* recently, does not establish that exposure to chemicals such as PFAS (per- and poly-fluoroalkyl compounds) and phenols (including BPA) caused these cancer diagnoses, it does provide a strong indication that they may have played a role and should be investigated further.

Researchers from UCSF, USC, and Michigan utilised data from the National Health and Nutrition Examination Survey (NHANES) from over 10,000 adults. They looked at the link between phenols and PFAS exposure and past cancer diagnoses, emphasising racial or ethnic differences.



The research is part of the Environmental Health Sciences Core Centres, financed by the United States National Institutes of Health.

Commenting on the strong findings, Dr Max Aung, the senior author of the study who conducted the research while at the UCSF Programme on Reproductive Health and the Environment and is now an associate professor of environmental health at USC Keck School of Medicine, said, "These findings highlight the need to consider PFAS and phenols as whole classes of environmental risk factors for cancer risk in women."

It is now a fact that PFAS, or forever chemicals, have contaminated water, food, and people through Teflon pans, wa-

terproof clothing, stain-resistant carpets, and food packaging. They last decades in the environment and can remain in the systems of people for months to years.

"These PFAS chemicals appear to disrupt hormone function in women, which is one potential mechanism that increases the odds of hormone-related cancers in women," said Amber Dr Cathey, the lead author of the study and a research faculty scientist at the University of Michigan, School of Public Health.

The study discovered racial differences in the relationship between PFAS and ovarian and uterine malignancies, as well as between MPAH and BPF and breast cancer, among non-white women.

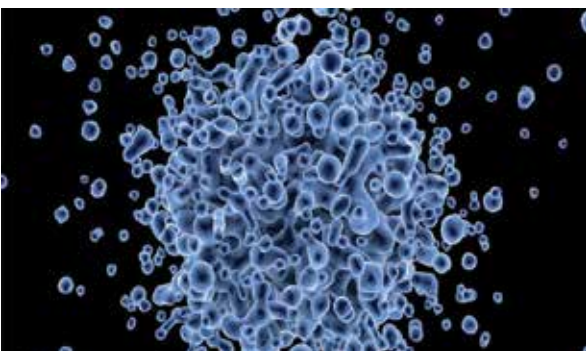
"Natural toxins hold promise against chemo-resistant cancer"

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In a potentially significant development in treating chemotherapy-resistant cancer patients, researchers from Queen Mary University of London uncovered two new genes that cause head and neck cancer patients to be resistant to chemotherapy, and silencing either gene can lead cancer cells that were previously resistant to chemotherapy to respond to it.

The study, led by researchers from the Queen Mary University of London and published in *Molecular Cancer* recently, is the first to show that the genes NEK2, which encodes a serine/threonine protein kinase that is involved in mitotic regulation, and INHBA, or Inhibin beta, a gene that is a subunit of both activin and inhibin, cause chemoresistance in head and neck squamous cell cancers (HNSCC), and that gene silencing of either gene reverses chemoresistance to many drugs.

Two genes discovered



work" in most human cancer types, implying that the findings could potentially apply to other cancers with elevated genes.

According to researchers, they also looked through a chemical library, which is often used for drug development, and discovered two compounds that may precisely target the two genes and make resistant cancer cells over 30 times more sensitive to cisplatin, a prominent chemotherapy medication. They accomplished this by lowering the levels of the two genes, which could be used along with existing chemotherapy treatments like cisplatin. Sirodesmin A, a fungus toxin, is one of these chemicals, and

Carfilzomib, a bacterium, is the other, suggesting that there may be current medications that may be repurposed to target new causes of disease, which may be less expensive than developing and manufacturing new drugs.

The researchers initially employed a technique known as data mining to discover genes that may alter cancer's response to medication therapy. They evaluated 28 genes on 12 chemoresistant cancer cell lines, discovering four 'significant' genes that were highly sensitive, which they then investigated further and tested for multidrug resistance. Commenting on the findings, Dr Muy-Teck Teh, senior

author of the study from Queen Mary University of London, said, "These results are a promising step towards cancer patients in the future receiving personalised treatment based on their genes and tumour type that gives them a better survival rate and treatment outcome."

"Unfortunately, there are lots of people out there who do not respond to chemotherapy or radiation. But our study has shown that in head and neck cancers at least, it is these two particular genes that could be behind this, which can then be targeted to fight against chemoresistance," he added.

Pointing out that treatment that does not work is damaging both for the NHS and patients themselves, Dr Teh said, "There can be costs associated with prolonged treatment and hospital stays, and it is naturally extremely difficult for people with cancer when their treatment does not have the results they are hoping for."

Junk food cancels healthy eating benefits for 25% of people: Study

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Obesity has been a worldwide health concern in recent decades, with chronic ailments such as heart disease and diabetes linked to excess body fat. Constant public awareness campaigns have expanded public awareness of the global epidemic of obesity.

However, the constant bombardment has led many individuals to prefer healthy foods, and many have limited their diet habits to healthier items with occasional junk food indulgences.

Researchers from the School of Life Course and Population Sciences and ZOE recently published findings in the *European Journal of Nutrition* on the snacking habits of

854 people from the ZOE PREDICT project. They found that half of the individuals did not match the healthiness of their meals to their snacks, negatively impacting their health measurements.

26% of people eat nutritious meals but consume poor-quality snacks, linked to worse health outcomes

Commenting on the study findings, Dr Sarah Berry from King's College London and chief scientist at ZOE said, "Considering 95% of us snack and that nearly a quarter of our calories come from snacks, swapping unhealthy snacks such as cookies, crisps, and cakes for healthy snacks like fruit and nuts is a really simple way to improve your health."

The study found that

the United Kingdom is a snacking nation, with cereal bars, pastries, and fruit accounting for 24% of our daily energy intake. The average daily snack intake among snackers (95% of the cohort) was 2.28 snacks per day, with 47% eating two snacks per day and 29% eating more than two.

Contrary to conventional assumptions, the study found that snacking is not unhealthy if the snacks are healthy.

According to the researchers, people who ate high-quality snacks such as nuts and fresh fruits on a regular basis were more likely to have a healthy weight than those who did not eat at all or snacked on harmful foods.

The study found that 26% of respondents reported eating nutritious meals but consuming poor-quality snacks, which are linked to worse health outcomes, in-

creased BMI, visceral fat mass, and postprandial triglyceride concentrations, linked to metabolic disorders like stroke and cardiovascular disease.

Among the most popular snacks, including cookies, fruit, nuts, cheese, butter, cakes, pies, and cereal bars, researchers said that cakes and pies have the highest calorie content, followed by breakfast cereals, ice cream, pastries, candy, cookies, and nuts.

According to them that chomping snacks after 9 p.m. is associated with poorer blood markers than all other snacking hours, emphasising that nibbling timing is as crucial for health as eating.

"This study contributes to the existing literature that food quality is the driving factor in positive health outcomes from food. Making sure we eat a balanced diet of fruit, vegetables, protein, and legumes is the best way to improve health," Dr Kate Bermingham from King's College London said.

Discovery unveiled: Beneficial role of casein in breast milk in nurturing gut microbiota in infants

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In a substantial development in understanding the role of breast milk and immunity in babies, Chinese researchers demonstrated for the first time that some proteins, including casein found in breast milk, promote the development of microbiota in the guts of babies, thereby indirectly influencing the immunity-regulating activity of breast milk proteins.

In the study recently published in *Frontiers in Microbiology*, the scientists demonstrated that variation in the protein

content of breast milk between women explains much of the variance in the abundance of essential beneficial microorganisms in their guts, implying that these proteins play a regulatory role in the immunological function of the gut microbiome in humans.

Breast milk has evolved over 320 million years to suit all of the physiological demands of babies, containing not just nutrients but also hormones, antimicrobials, digestive enzymes, and growth factors.

Furthermore, numerous preclinical studies have found that proteins

included in breast milk, including casein and milk fat globule membrane proteins, not only provide energy and molecular building blocks but also directly promote immunity, the researchers said.

Likewise, because of their position in the gut microbiota, breast milk proteins may have a dual immune-boosting function, directly stimulating the immune system and indirectly influencing the number of gut microorganisms, which in turn, influence immunity.

Commenting on the findings of the study, joint senior author Dr Ignatius



Man-Yau Szeto from the Yili Maternal and Infant Nutrition Institute in Beijing said, "Here we show that the concentration of certain proteins in human breast milk predicts the abundance of specific gut microorganisms in infants, which are known to be important and necessary for health."

"These findings suggest that maternal proteins play a role in the early immune and metabolic development of immunity in babies," he added.

For their study, Dr Szeto and his team looked at the protein composition of 23 Chinese mothers as well as

the diversity and number of beneficial gut microorganisms in their infants' faeces using liquid chromatography techniques.

Focusing on nine proteins found in breast milk, the researchers found that casein, alpha-lactalbumin, and lactoferrin were the most prevalent proteins. Except for immunoglobulin A, an antibody necessary for mucous membrane immune function, the levels of all proteins tested dropped from 42 days to three months after delivery.

They further found that the bacterial species *Bifidobacterium*, *Escherichia coli*, *Streptococcus*,

and *Enterobacter* dominated the gut microbiome of the newborns.

Explaining their work, Co-senior author Dr Ai Zhao from Tsinghua University said, "We focused on nine milk proteins, including osteopontin, lactalbumin, and kappa-casein, because these were recently found to benefit the early development of infants."

"Their function and mechanisms have not yet been fully discovered, so we wanted to examine their potential role in regulating the microbiome of infants," Dr Zhao added.

The strongest asso-

ciations were discovered between breast milk protein concentrations and two beneficial bacteria that were relatively rare within the guts of babies' microbiome, namely *Clostridium butyricum* and *Parabacteroides distasonis*, both of which are used as probiotics for humans and domestic animals.

The results of this study suggest that specific proteins in breast milk can influence the abundance of certain gut microbes in infants, playing a significant role in early immune and metabolic development," the authors concluded.

In a breakthrough, researchers close in on preeclampsia cure

Rajeev Choudhury
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In a ground-breaking development, researchers from Western and Brown Universities claimed to have found a harmful protein that plays a substantial role in inducing preeclampsia in groundbreaking progress towards understanding the fundamental cause and therapeutic therapy for preeclampsia.

Pregnancy-related problems impact up to 8% of pregnancies worldwide and are the major cause of maternal and foetal mortality owing to early delivery, placental difficulties, and a lack of oxygen.

The study, directed by Drs. Kun Ping Lu and Xiao Zhen Zhou at Western and Drs. Surendra Sharma and Sukanta Jash at Brown, discovered a hazardous protein, cis P-tau, a protein long associated with Alzheimer's disease, in the blood and placenta of preeclampsia patients.

Pointing out that the root cause of preeclamp-

Our study identifies cis-P-tau as a crucial culprit and biomarker for preeclampsia. It can be used for early diagnosis of the complication and is a crucial therapeutic target.

Dr Surendra Sharma
Former professor of pathology and laboratory medicine (research) and a professor of paediatrics research Brown University

sia has so far remained unknown, Lu, professor of biochemistry and oncology at Schulich School of Medicine and Dentistry, also a Western Research Chair in Biotherapeutics, said, "Without a known cause, there has been no cure. Preterm delivery is the only life-saving measure."

"Our study identifies cis-P-tau as a crucial culprit and biomarker for preeclampsia. It can be used for early diagnosis of the complication and

is a crucial therapeutic target," said Sharma, who recently retired from his Brown roles as a professor of pathology and laboratory medicine (research) and a professor of paediatrics research.

The study expands on the discovery by Sharma, a famous preeclampsia researcher, and his colleagues in 2016 that preeclampsia and disorders such as Alzheimer's have similar fundamental causes related to protein problems.

Until recently, cis-P-tau was mostly linked to neurological illnesses such as Alzheimer's disease, traumatic brain injuries (TBI), and stroke. Lu and Zhou identified this link in 2015 as a result of their decades of research on the role of tau protein in cancer and Alzheimer's.

Zhou developed an antibody in 2012 that targets only the harmful protein while leaving the healthy counterpart alone, and it is presently being tested in human patients suffering from TBI and Alzheimer's dis-

ease. In animal models and human cell cultures, the antibody has demonstrated promising results in treating brain disorders.

The researchers wanted to see if the same antibody might be used to treat preeclampsia. They discovered unexpected results when they tested the antibody in mouse models.

"In this study, we found the cis-P-tau antibody efficiently depleted the toxic protein in the blood and placenta and corrected all features associated with preeclampsia in mice. Clinical features of preeclampsia, like elevated blood pressure, excessive protein in the urine, and foetal growth restriction, among others, were eliminated, and pregnancy was normal," said Sharma.

Sharma and his colleagues at Brown University have been working on creating an assay for the early diagnosis of preeclampsia and its treatments. He feels the findings of the study have taken them closer to their

aim.

Recent research has also shed light on preeclampsia's long-term impacts and possible links to brain health.

Pointing out that preeclampsia presents immediate dangers to both the mother and foetus, but its long-term effects are less understood and still unfolding, Sharma said, "Research has suggested a heightened risk of dementia later in life for both mothers who have experienced preeclampsia and their children." However, the causal link between preeclampsia and dementia is not known.

According to the researchers, this new study has identified a possible underlying explanation for the complicated link between preeclampsia and brain health.

"Our study adds another layer to this complexity. For the first time, we've identified significant levels of cis-P-tau outside the brain in the placenta and blood of preeclampsia patients. This suggests a deeper connection between preeclampsia and brain-related issues," said Jash, the lead author of the study.

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Silent killer: 75% of aortic aneurysms go unnoticed

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About 75% of individuals with aortic aneurysms do not experience any symptoms. An aortic aneurysm is a swelling in the wall of the aorta, the primary artery of the heart. Dr Nirranjan Hiremath, Senior Consultant in Cardiovascular and Aortic Surgery and Surgical Lead of the Apollo Aortic Programme at Indraprastha Apollo Hos-

Uncontrolled hypertension, smoking, family history, and a history of heart disease along with weak aorta due to genetic factors are some of the major causes of aortic aneurysm

pitals, described this condition as a "silent threat."

During an awareness event about aortic diseases at Indraprastha Apollo

Hospitals, Dr Hiremath explained, while speaking exclusively to Drug Today Medical Times, "The aorta is the heart's primary

artery, responsible for supplying blood to the entire body. Various issues can arise in the aorta that affect its function. Sometimes, the aortic valve is impacted, or there might be a valve leak. If the aorta expands beyond four centimetres or ruptures, it can become a serious and life-threatening situation."

Dr. Hiremath added that aortic disease, particularly aortic dissection, is often called a "silent killer" due to its sudden and life-threatening nature.

He added that aortic dissection is a serious medical condition that can occur when the inner layer of the aorta, the largest artery in the body, tears. This can lead to life-threatening aorta ruptures if not treated promptly.

He said that raising awareness among the masses about aortic diseases is necessary for preventing this life-threatening condition.

Uncontrolled hypertension, smoking, family history, and a history of heart disease are some of the major causes of aortic aneurysms. Some people have weak aortas due to problems in their genes.

Heart ultrasounds, called echocardiograms, can help doctors find problems with the aorta. If the doctor discovers an issue with the aorta, they may recommend a CT angiogram, a test that shows the entire aorta.

A healthy lifestyle, including a low intake of sugar and salt, eating in moderation, and exercising, can prevent aortic diseases.

"However, these diseases remain silent, but one can feel their symptoms. In an aortic aneurysm, the aorta increases by more than four centimetres can lead to pain in the chest and left hand. Symptoms like a heart attack can also occur in aortic aneurysm," Dr Hiremath said.

44% of spinal chord injuries in India are due to road accidents

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Road accidents are a major cause of spinal cord injuries in India, accounting for 44% of all such injuries, according to a study by the Indian Spinal Injuries Center (ISIC).

The study was carried out between 2012 and 2022 and it found that the total patients with Spinal Cord injuries due to road accidents accounted for 44%, followed by fall at 38.3%

ISIC observes SCI Day 2023 and Calls for an Inclusive Society amidst alarming data.

Revealing the study, doctors said that these are alarming figures despite government's efforts to improve safety through measures such as compulsory seat belts, helmet-wearing, and better road infrastructure, road traffic accidents (RTA) continue to be the leading cause of spinal cord injuries in India.

The doctors have stressed the need for inter-departmental coordination between law enforcement, civil society, healthcare institutions, and insurers to prevent road accidents and ensure comprehensive post-trauma rehabilitation.

The ISIC had 1,537 patients as a total number of patients and patients with SCI due to RTA accounting for 661 individuals (44%) and FFH accounting for 588 individuals (38.3%).

The latest data, in comparison to a Study conducted by ISIC nearly a decade ago, manifested that over a decade there has been no significant improvement pertaining to SCI. A peer-reviewed study conducted by ISIC and published in the journal Spinal Cord nearly a decade ago revealed significant demographic differences in spinal cord injuries between India and developed coun-

tries.

The study revealed a lower mean age, a higher proportion of males, and a prevalence of injuries caused by two-wheeler accidents and falls. Road traffic accidents (45%) and falls from height (39.63%) were the primary modes of injury during the period of 2002-2010, based on 1138 admissions to the hospital.

A comparative analysis with the National Spinal Cord Injury Statistical Centre (NSCISC) data from Birmingham, UK (2010-2018), reveals that vehicular accidents accounted for 38.52% of

cases, falls from height 31.13%, acts of violence 13.55%, and sports/recreational activities 8.57%.

Dr. Vikas Tandon, Chief of Spine Services at ISIC, said, "Spinal cord injuries are life-altering, affecting not just physical health but also emotional, social, and vocational aspects. Our data highlights the persistent challenge of road traffic accidents in India, and we call for a multifaceted approach, from recognizing SCI in government policies to enhancing accessibility and rehabilitation."

"Our aim is to con-

tribute to an end-to-end solution for individuals grappling with spinal cord injuries and to foster a society that embraces diversity and inclusivity," added Dr Tandon.

Rehabilitation is crucial for improving functional abilities of persons with Spinal Cord Injuries (SCI), involving physiotherapy, occupational therapy, and post-surgical intervention. ISIC is actively seeking to employ individuals with disabilities, promoting inclusivity and promoting employment opportunities through its Human Resources Department.



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