



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Wednesday 20190508

Arsenic in drinking

Arsenic in drinking water may change heart structure: Study (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/arsenic-in-drinking-water-may-change-heart-structure-study/769526.html>

Staying active in midlife may depend on mental wellbeing

Arsenic in drinking water may change heart structure: Study

Several studies have shown that arsenic exposure raises the risk of heart disease and its risk factors, including high blood pressure and diabetes.

Drinking water contaminated with arsenic may lead to thickening of the heart's main pumping chamber in young adults, increasing the risk for future heart problems, a study warns.

People are most frequently exposed to arsenic, a toxic metalloid, through drinking water in areas where groundwater is contaminated.

"People drinking water from private wells, which are not regulated, need to be aware that arsenic may increase the risk for cardiovascular disease," said Gernot Pichler from Hospital Hietzing/Heart Center Clinic Floridsdorf in Austria.

"Testing those wells is a critical first step to take action and prevent exposure," said Pichler, lead author of the study published in the journal *Circulation: Cardiovascular Imaging*.

Several studies have shown that arsenic exposure raises the risk of heart disease and its risk factors, including high blood pressure and diabetes.

This is the first study to review the question in young American Indians in Oklahoma, Arizona and North and South Dakota.

Researchers reviewed data from the Strong Heart Family Study, a study evaluating cardiovascular risk factors among American Indians.

Arsenic exposure was measured in urine samples from 1,337 adults (average age 30.7 years, 61 per cent female) and the size, shape and function of their hearts were assessed using ultrasound (echocardiography).

None of the participants had diabetes or heart disease at the start of the five-year study.

Arsenic exposure was higher than in the general US population, but lower than that found in other studies conducted in Mexico and Bangladesh.

With a two-fold increase in arsenic in the urine, the researchers found 47 per cent greater chance of thickening of the heart's main pumping chamber (left ventricle) in the group as a whole.

They also found 58 per cent greater chance of thickening of the left ventricle in participants with increased or high blood pressure.

"The stronger association in subjects with elevated blood pressure suggests that individuals with pre-clinical heart disease might be more prone to the toxic effects of arsenic on the heart," Pichler said.

The study is limited by having only one measure of arsenic exposure, and by the lack of long-term follow-up of the participants.

Although the study was performed in tribal populations in the north, central and southwestern US, the results are likely to be generalisable to millions of people in other rural locations exposed to low or moderate levels of arsenic in their water, said Pichler.

"The study raises the question of whether the changes in heart structure are reversible if exposure is reduced.

"Some changes have occurred in water sources in the study communities, and it will be important to check the potential health impact of reducing arsenic exposure," Pichler said. —

Alzheimer's

New blood test may detect Alzheimer's 8 years earlier (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/new-blood-test-may-detect-alzheimer-s-8-years-earlier/769084.html>

Scientists have developed a simple blood test that may help detect Alzheimer's disease eight years before the first clinical symptoms occur.

Using current techniques, Alzheimer's disease, the most frequent cause of dementia, can only be detected once the typical plaques have formed in the brain, said researchers from Ruhr-Universität Bochum (RUB) in Germany.

At this point, therapy seems no longer possible, they said.

However, the first changes caused by Alzheimer's take place on the protein level up to 20 years earlier.

A two-tier method, described in the journal *Alzheimer's and Dementia: Diagnosis, Assessment and Disease Monitoring*, can help detect the disease at a much earlier stage.

"This has paved the way for early-stage therapy approaches, where the as yet inefficient drugs on which we had pinned our hopes may prove effective," said Professor Klaus Gerwert from RUB.

In Alzheimer's patients, the amyloid beta protein folds incorrectly due to pathological changes long before the first symptoms occur.

Researchers successfully diagnosed this misfolding using a simple blood test.

As a result, the disease can be detected about eight years before the first clinical symptoms occur, they said.

However, the test was not suitable for clinical applications, according to the researchers.

It detected 71 per cent of Alzheimer's cases in symptomless stages, but provided false positive diagnoses for nine per cent of the study participants, they noted.

In order to increase the number of correctly identified Alzheimer's cases and to reduce the number of false positive diagnoses, the researchers introduced the two-tier diagnostic method.

They used the original blood test to identify high-risk individuals.

They added a dementia-specific biomarker, tau protein, to run further tests with those test participants whose Alzheimer's diagnosis was positive in the first step.

If both biomarkers show a positive result, there is a high likelihood of Alzheimer's disease, researchers said.

"Through the combination of both analyses, 87 of 100 Alzheimer's patients were correctly identified in our study," said Gerwert.

"And we reduced the number of false positive diagnoses in healthy subjects to three of 100.

“The second analysis is carried out in cerebrospinal fluid that is extracted from the spinal cord,” he said.

“Now, new clinical studies with test participants in very early stages of the disease can be launched. He is hoping that the existing therapeutic antibodies will still have an effect.

“Once amyloid plaques have formed, it seems that the disease can no longer be treated,” said Andreas Nabers, head of the research group.

The blood test has been upgraded to a fully automated process.

“The sensor is easy to use, robust when it comes to fluctuation in concentration of biomarkers, and standardised,” said Nabers. PTI

Radar system

Radar system can monitor body’s vital signs wirelessly (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/radar-system-can-monitor-body-s-vital-signs-wirelessly/769082.html>

The radar unit was mounted to the ceiling over the bed of more than 50 volunteers as they slept normally in a model long-term care apartment. File photo

Scientists have developed a radar system that can wirelessly monitor the vital signs of patients, eliminating the need to hook them up to any machines.

Housed in a device smaller than a cellphone, the new technology records heart and breathing rates using sensitive radar waves that are analysed by sophisticated algorithms embedded in an onboard digital signal processing unit.

Researchers at the University of Waterloo in Canada developed the system to monitor sleep apnea patients by detecting subtle chest movements instead of connecting them to equipment in labs via numerous cumbersome wires.

“We take the whole complex process and make it completely wireless,” said George Shaker, an engineering professor at Waterloo.

“And instead of a clinic, it could be done in the comfort of your own bed and run daily for continuous monitoring,” Shaker said in a statement.

The radar unit was mounted to the ceiling over the bed of more than 50 volunteers as they slept normally in a model long-term care apartment.

The system, which collects and analyses data from radar waves that are reflected back to the unit from the bodies of patients, achieved results over 90 per cent as accurate as standard hard-wired equipment.

“This is the first time radar has been used for heart sensing with this degree of accuracy and in such an uncontrolled environment,” said Mostafa Alizadeh, a research associate who led the study.

“Our subjects slept unobstructed, in any position, for up to eight hours,” Alizadeh said.

Researchers are also exploring use of the technology to monitor activity levels and falls by residents of long-term care homes, and in hospitals for routine monitoring of heart and breathing rates of all kinds of patients.

Advantages of the system for apnea monitoring include complete privacy since no cameras are used, much improved comfort and potential use in homes rather than special sleep clinics.

“With traditional systems involving wires and appointments booked weeks in advance, you can’t sleep as you normally do in your own bed at home, making the common sleep study an unpleasant experience,” said Shaker.

In addition to sleep apnea, which involves breathing that repeatedly stops and starts, the system can monitor conditions such as periodic limb movement disorder, restless leg syndrome and seizures. P

Hypertension

Most Indian adults not aware they are suffering from hypertension (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/most-indian-adults-not-aware-they-are-suffering-from-hypertension/768650.html>

Hypertension prevalence in India is high, but only 45 per cent of people are aware of their diagnosis, according to a first large-scale population based study of hypertension care in India.

Researchers have used National Health and Family Survey (NFHS-4, 2015-16) data of 731864 individuals aged 15-49 years, which covered each district of 29 states and 7 union territories of India.

The study published in PLOS Medicine suggests that 3 out of 4 individuals with hypertension ever had their blood pressure measured, less than half of individuals (45 per cent) had been

diagnosed, 13 per cent reported currently taking hypertensive medication, while 8 per cent had their blood pressure under control.

The study was carried out by researchers at the Public Health Foundation of India (PHFI), Harvard TH Chan School of Public Health, the Heidelberg Institute of Global Health, the University of Birmingham and the University of Gottingen.

The study also found adults living in rural areas, men, and those who were poorer, were even less likely to receive the care they need.

Only 5.3 per cent of hypertensive men and 10.9 per cent of hypertensive women aged 15-49 years have their blood pressure under control (i.e., they are taking medications and have a normal blood pressure), it stated.

There is a huge state-level variation in hypertension screening.

Screening of hypertensive individuals was lowest in Madhya Pradesh (61.3 per cent) and highest in Haryana (93.5 per cent).

More than half of Indians aged 15-49 years with hypertension are not aware of their hypertension status. Awareness level was lowest in Chhattisgarh (22.1 per cent) and highest in Puducherry (80.5 per cent).

27 major states/union territories have blood pressure control rates below 10 per cent.

Daman and Diu was the highest, but still only 1 in 5 adults there are under control.

The study highlighted the urgent need of improvements in hypertension awareness, care and control for all Indians specially amongst the most productive years (15-49 years).

Dr Dorairaj Prabhakaran, Vice President, Research and Policy, at PHFI and one of the authors of the study, said detection of hypertension is straightforward, treatments are simple yet effective, and hence hypertension can be easily controlled.

“Control of hypertension prevents future stroke, heart attacks and deaths. However, it is an unfortunate paradox that India does not perform well in any of the measures of detection, treatment and control. I believe the new National Health Mission through the health and wellness clinics has the potential to address the issue,” he said.

Dr Lindsay Jaacks, faculty at the Harvard T.H. Chan School of Public Health and visiting faculty at PHFI said, “This is not just an assessment of health systems. We need demand-side interventions to raise awareness in India that hypertension is relatively easy and cheap to treat, and that keeping it under control can have huge benefits in terms of preventing heart attacks and stroke.” PTI

Mental wellbeing

Staying active in midlife may depend on mental wellbeing (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/staying-active-in-midlife-may-depend-on-mental-wellbeing/768630.html>

Staying physically active in midlife depends a lot on your overall satisfaction with life or mental wellbeing a decade earlier, not just your physical health, suggests new research.

Men and women with high mental well-being at the age of 42 were more physically active at the age of 50 compared to those who got lower scores in mental well-being at age 42, said the study published in the journal Applied Research in Quality of Life.

The researchers investigated mental well-being through three dimensions: emotional, psychological and social well-being.

Emotional well-being indicates overall satisfaction with life and a tendency to have positive feelings. Psychological well-being refers to experiences of personal growth and the purpose of life. Social well-being tells about relationships with other people and the community.

The researchers found that leisure time physical activity did not predict later mental well-being or subjective health, but mental well-being predicted physical activity.

It seems that mental well-being is an important resource for maintaining a physically active lifestyle in midlife, said Tiia Kekalainen from University of Jyväskylä, Finland.

For the study, the researchers gathered data from over 300 people at ages 42 and 50 by questionnaires and interviews.

Walking was related to emotional well-being, rambling in nature to social well-being and endurance training to subjective health, the study said.

"Although exercise did not predict later mental well-being or subjective health in this study, exercise is important for current mental well-being and health," Kekalainen said. — IANS

Alzheimer's

Blood test to spot Alzheimer's before symptoms occur (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/blood-test-to-spot-alzheimer-s-before-symptoms-occur/768216.html>

Most Indian adults not aware they are suffering from hypertension

Blood test to spot Alzheimer's before symptoms occur

Researchers have developed a new test that could help doctors detect Alzheimer's disease eight years before the first symptoms occur.

Researchers have developed a new test that could help doctors detect Alzheimer's disease eight years before the first symptoms occur.

Using current techniques, Alzheimer's disease, the most frequent cause of dementia, can only be detected once the typical plaques have formed in the brain.

At this point, therapy seems no longer possible. However, the first changes caused by Alzheimer's take place on the protein level up to 20 years sooner.

"Once amyloid plaques have formed, it seems that the disease can no longer be treated," said study co-author Andreas Nabers from Ruhr-University Bochum in Germany.

In Alzheimer's patients, the amyloid beta protein folds incorrectly due to pathological changes long before the first symptoms occur.

A team of researchers headed by Klaus Gerwert from Ruhr-University Bochum successfully diagnosed this misfolding using a simple blood test. As a result, the disease could be detected approximately eight years before the first clinical symptoms occur.

But experiments showed that the test was not suitable for clinical applications as the test provided false positive diagnoses for nine per cent of the study participants.

In order to increase the number of correctly identified Alzheimer's cases, the researchers have now introduced the two-tier diagnostic method.

To this end, they use the original blood test to identify high-risk individuals. Subsequently, they add a dementia-specific biomarker, namely tau protein, to run further tests with those test participants whose Alzheimer's diagnosis was positive in the first step.

If both biomarkers show a positive result, there is a high likelihood of Alzheimer's disease, said the study published in the journal *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*.

"Through the combination of both analyses, 87 of 100 Alzheimer's patients were correctly identified in our study," Gerwert said.

"Now, new clinical studies with test participants in very early stages of the disease can be launched," Gerwert added. — IANS

Make time for fitness

Irregular work hours or working in shift duties should not affect your workout routine (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/make-time-for-fitness/767751.html>

Beat the clock: Stick to an exercise schedule no matter what time of the day it is

What is the right time to exercise? Does a morning session give the best result or a relaxed session in the evening ? Our elders recommended getting up early, exercising and eating nutritious food so that one stays activated all day.

As lifestyles change as do working hours, these maxims may not hold good in present times. It also depends on circadian rhythm or body clock. Some people are night owls who like to sweat it out during late evenings and feel lazy in the morning whereas some are early birds who like to start their day with a good work out. The committed ones, however, like to sweat it out any time of the day depending on the availability of time.

The truth is that there is no time of the day that can be termed best to exercise as everyone's body is different. One must choose a time of the day one can stick to, so that it becomes a habit.

Many people who work in multiple shifts or have irregular work hours may not be able to stick to one time, hence it becomes important that one exercises as and when one can find time and not wait for any particular time of the day to get going.

The body clock plays an important role especially when one is working in multiple shifts. One must follow the body's inner clock to be able to exercise well. A good diet and sleeping patterns are the two other important factors that keep one motivated; hence, giving equal importance to both is a vital requirement. Set a number of hours for exercise every week, one may divide these hours as to how one is placed during the week. This helps one to stick to the time devoted to exercise.

Body temperature also plays an important role to get one ready to exercise. A cold body leaves muscles stiff and is more prone to injuries whereas a good warm-up allows muscles to stretch better. Usually body temperature increases during the day that allows for increased endurance and enhanced performance. One must warm-up well before starting exercising, especially if done during the morning.

Those working in shifts should try to find time before leaving for work or after their shift ends. If one is working a few days on longer shifts with few days off, in between, combining an intense strength building routine on 'off days' with light exercise routines on long shift days can help one stick better to the schedule. If regularly going to the gym is not possible, opt for a simple workout at home before or after working hours.

For a simple workout at home, do some body weight exercises. Have some equipment at home that is easy to use such as a theraband or simple weights to perform basic exercises. A sample circuit can be as below:

n Body weight push-ups

n Bicep curls using therabands.

n Burpees

n Body weight squats

n Climbing stairs

n Plank

Perform first exercise for 30 seconds followed by 15 seconds break. Perform second exercise for next 30 seconds followed by 15 seconds break and continue until the sixth exercise. Once all exercises are performed one circuit will be completed; take a 3-minute break. Opt for 3 to 4 circuits. Modify as per the conditioning level.

Also remember to warm up and stretch well before exercising and cooling off after the workout with some stretches.

Small changes in daily habits like climbing stairs instead of taking an elevator, walking instead of driving, replacing sugary drinks with green tea, black coffee, etc. can go a long way in keeping the body fit.

To conclude what is most important is sticking to an exercise schedule no matter what the time of the day it is. Sticking to a regular workout routine gives one the desired results. It is better to have a 20-minute workout schedule daily then one hour session on alternate days.

Working out at least six days a week can offset many problems that can arise from working irregular hours. So put on those running shoes no matter what time of the day or night it is.

—The writer is owner and trainer, Anytime Fitness, New Delhi.

Oral contraceptives

Oral contraceptives may protect women against knee injuries: Study (The Tribune: 20190508)

<https://www.tribuneindia.com/news/health/oral-contraceptives-may-protect-women-against-knee-injuries-study/767664.html>

Oral contraceptives may lower the risk of serious knee injuries in women, according to a large-scale observational study.

The study, published in The Physician and Sportsmedicine journal, involved over 165,000 female patients aged between 15 and 49.

Researchers from Brown University analysed a decade of prescription and insurance information from a large US national database.

They found that oral contraceptives were most protective in young women aged 15-19 years, who were 63 per cent less likely to need reconstructive surgery following anterior cruciate ligament (ACL) injury compared with aged matched controls.

The findings have important implications for the nearly one in two athletes with ACL tears who are unable to return to athletic competition, and the 20-50 per cent who develop arthritis within 10-20 years of their injury, researchers said.

ACL injuries are extremely common, especially among the young athletic population, and are two to eight times more common in women than men.

Previous research suggests that elevated estrogen may play a role in female athletes' greater risk of ACL injury.

The researchers analysed the records of female patients who were taking the most common types of oral contraception.

Rates of ACL reconstruction in women taking oral contraceptives during the 12 months prior to injury and undergoing surgery (82,874) were compared to a control group of the same age with a similar injury who were not taking oral contraceptives (82,874).

A total of 465 women in the oral contraceptive group required surgical reconstruction of the ACL between 2007 and 2017 compared to 569 in the control group.

Results showed that women taking oral contraceptives were 18 per cent less likely to require reconstructive surgery compared to matched controls.

The researchers speculate that taking pills containing the hormones estrogen and progesterone may suppress the hormonal surges during the menstrual cycle, leading to a lower rate of injury.

"It's likely that oral contraceptives help maintain lower and more consistent levels of estrogen and progesterone, which may lead to periodic increase in laxity and subsequent risk of tear," said Steven DeFroda from Brown University, who led the study.

While acknowledging the potential risks, the study authors conclude that the findings support the use of oral contraceptives in elite high school and college-aged athletes, especially those at higher risk of ACL tears such as soccer and basketball players.

"Young athletes use oral contraceptives for a variety of reasons including regulating their menstrual cycle and/or preventing pregnancy.

"With careful assessment of the risks, injury risk reduction could be another way in which female athletes may benefit from their use," said DeFroda.

This is an observational study, so no firm conclusions can be drawn about cause and effect.

The authors point to several limitations of the study, including that it only examined a limited number of risk factors such as age and comorbidity.

It did not assess participation in sports/activity level that might explain why some women tore their ACLs and others did not. — PTI

Women – Gender Disparity

Current crisis in SC is an opportunity to address serious gender disparity on the bench (The Indian Express: 20190508)

<https://indianexpress.com/article/opinion/columns/cji-ranjan-gogoi-clean-chit-sexual-harassment-case-supreme-court-5715766/>

The present calamity in the judiciary, as unfortunate as it is, also provides an unprecedented opportunity to course correct on several accounts. Here's hoping the men in power have the wisdom to seize it.

The writer is senior resident fellow, Vidhi Centre for Legal Policy, Karnataka.

The judiciary is one of the least diverse institutions in this country with lack of gender diversity being the most visible yet ignored aspect. (Illustration by CR Sasikumar)

The Indian judiciary is facing its worst hour of crisis. The allegation of sexual harassment and victimisation levelled against the Chief Justice of India by a former Supreme Court staffer, followed by what can only be termed as a mockery of due process and law, has brought the judiciary to a tipping point. It is now left with no choice but to undertake a massive exercise in introspection and reform. Judicial reforms are no longer empty rhetoric. They are essential to keep the judiciary from becoming irrelevant and severed from the idea of justice. Nothing can be more damaging to this idea than going unheard and unrepresented before the judiciary — a fear that constantly plagues all disadvantaged sections of the society, especially women.

In the context of the apathy shown towards the woman complainant by an all-male bench (headed by the CJI) in the immediate aftermath of the allegations, and by the in-house committee which has given a clean-chit to the CJI, one cannot help but ponder: Would this incident have been handled differently if the judiciary was not as male-dominated as it always has been?

The judiciary is one of the least diverse institutions in India, with the lack of gender diversity being the most visible yet ignored aspect. Since 1950, the SC has had only eight female judges out of 239, with the present three out of 27 being the highest concurrent representation women have ever had on the SC bench. In the subordinate judiciary, merely 27.6 per cent of the judges are female. This lack of women on the bench, at all levels of the judiciary, is at the very root of the impunity with which the top court has, in a single stroke, destroyed decades worth of progress made in deterring sexual harassment of women from all walks of life.

The stark gender disparity on the bench is reflected in, and in fact, stems from the minimal representation of female advocates in the bar as well. The deep-rooted systemic issues that act as barriers for women to enter and remain in the legal profession are all too well known. Even if a female advocate crosses these barriers to continue and thrive in her profession, the current collegium system for the appointment of judges is simply not designed to ensure her elevation to the bench. At present, the appointment of a judge to a high court is based on a recommendation made by a collegium of the three senior-most judges of that HC, and approved by a collegium of the three senior-most judges of the SC. Although the state and central governments have a role to play in the process, the final say, for all practical purposes, rests with the SC collegium.

This appointments process in itself is severely lacking in women's representation. In 25 HC collegiums across the country, there are just five senior female judges with 19 of the collegiums

having no female judge at all. Only one woman so far has been a member of the SC collegium (Justice Ruma Pal), with Justice R Banumathi set to become the second later this year; and, at least until 2025, no female judge is going to occupy the CJI's position.

This nearly all-male composition of the highest decision-making bodies in the judiciary has made gender disparity a self-perpetuating phenomenon which becomes amply clear when one studies the decisions made by the SC collegiums in the recent past.

This author undertook a study of 80 (out of 191) SC collegium resolutions made public since October 2017, pertaining to elevations of judges to the SC and various HCs, and, it shows that the gender gap in the judiciary is here to stay.

The data shows that out of the 363 persons recommended for elevation, merely 39 were female (just over 10 per cent). Of these, only 21 were confirmed with the remaining 18 names either being remitted to the HCs or deferred for later appointments. Interestingly, for both male and female candidates, the conversion rate from recommendation to elevation is the same, around 55 per cent: It would be tempting to conclude from this that the all-male SC collegium is immune to the gender of the recommended candidates. However, what it actually signals is that this body is simply not invested in correcting the prevailing gender disparity.

Best Of Express

In battleground UP, BJP banks on 48-hour booth management

Lahore: Blast outside Sufi shrine kills 4, say Pakistani police

Bribes to press: Leh poll officer for FIR against BJP

In the current scheme of things, the chances of female judges occupying decision-making positions, either as chief justices or as part of the HC and SC collegiums in significant numbers, is very bleak. Hence, the only way out of this vicious cycle is for the nearly all-male collegiums to go beyond their inherent biases and take affirmative measures to improve gender diversity on the bench. The HC collegiums should consciously recommend more female names for elevation and the SC collegium must consider such recommendations more favourably. Further, the female judges should be elevated early enough in their careers so that they make it to the collegiums and become decision makers (the average age of the 19 female judges elevated since October 2017 is 53 years).

Lack of gender diversity is not just a perception problem. It is seen to have a real impact on the manner of proceedings and the nature of the final verdict — as is evident in the present instance. Especially in the judiciary, gender diversity is a virtue in itself — it reassures litigants that diverse opinions are taken into consideration and re-instills their trust in the justice-delivery system. The present calamity in the judiciary, as unfortunate as it is, also provides an unprecedented opportunity to course correct on several accounts. Here's hoping the men in power have the wisdom to seize it.

This article first appeared in the print edition on May 8, 2019, under the title ‘No courts for women’. The writer is senior resident fellow, Vidhi Centre for Legal Policy, Karnataka. Inputs by Anamika Kundu and Alok Prasanna Kumar

Dengue vaccine

Why US has cleared dengue vaccine with conditions, where India stands (The Indian Express: 20190508)

<https://indianexpress.com/article/explained/us-cleared-dengue-vaccine-conditions-india-sanofi-5715923/>

Dengvaxia ran into trouble two years ago when the Philippines had to suspend a school vaccination programme following several casualties. Sanofi Pasteur’s controversial vaccine dengvaxia has been approved by the US Food & Drug Administration, the first dengue vaccine to get the regulatory nod in the US.

Advertising

Dengvaxia ran into trouble two years ago when the Philippines had to suspend a school vaccination programme following several casualties. That is why the FDA has now cleared it for use only in people who have a previous history of the disease, particularly in dengue-endemic areas.

The background

Dengvaxia is basically a live, attenuated dengue virus. An attenuated virus is a virus that retains its properties of triggering an immune response in the body but its ability to lead to a disease is compromised. Three dengvaxia shots are administered, with the second and third given six and 12 months after the first one. It was cleared in three randomised, placebo-controlled studies over approximately 35,000 individuals in dengue-endemic areas, including Puerto Rico, Latin America and the Asia Pacific region. It was found to be about 76% effective in 9-16-year-olds already exposed to the disease.

The need for a vaccine

According to the Centers for Disease Control and Prevention, an estimated 400 million dengue virus infections occur around the world. Of these, approximately 500,000 cases develop into dengue haemorrhagic fever, which contributes to about 20,000 deaths, primarily among children. In India, until November 26, 2018, 89,974 dengue cases were reported, with 144 deaths. In 2017 the counts were 1,88,401 and 325 respectively. India is among the dengue-endemic countries.

Dengvaxia is the first dengue vaccine to be licensed, Mexico being the first country to clear it in 2015. Subsequently it has been cleared in some 20 countries but what happened in 2017 in Philippines has raised question marks about CYD-TDV, as dengvaxia is known in technical parlance.

The Philippines casualties

Ten deaths were reported in the island nation in 2017 in the aftermath of a school vaccination campaign with dengvaxia. Some 800,000 school children had been vaccinated when adverse events started being reported and the campaign was suspended. Sanofi, in a statement soon afterwards, urged health authorities to update the product label. The statement said: “Based on up to six years of clinical data, the new analysis evaluated long-term safety and efficacy of Dengvaxia in people who had been infected with dengue prior to vaccination and those who had not. The analysis confirmed that Dengvaxia provides persistent protective benefit against dengue fever in those who had prior infection. For those not previously infected by dengue virus, however, the analysis found that in the longer term, more cases of severe disease could occur following vaccination upon a subsequent dengue infection.” In other words, Sanofi admitted the vaccine was not safe to be used in people with no history of the disease. WHO too issued a statement saying that it has asked the company for more data.

Earlier this year, Philippines permanently halted the sale distribution and marketing of dengvaxia.

The FDA recommendation

In its announcement last week, FDA said the vaccine can be used for the prevention of dengue “caused by all dengue virus serotypes (1, 2, 3 and 4) in people ages 9 through 16 who have laboratory-confirmed previous dengue infection and who live in endemic areas”.

Best Of Express

In battleground UP, BJP banks on 48-hour booth management

Lahore: Blast outside Sufi shrine kills 4, say Pakistani police

Bribes to press: Leh poll officer for FIR against BJP

“Dengvaxia is not approved for use in individuals not previously infected by any dengue virus serotype or for whom this information is unknown. This is because in people who have not

been infected with dengue virus, Dengvaxia appears to act like a first dengue infection – without actually infecting the person with wild-type dengue virus – such that a subsequent infection can result in severe dengue disease. Therefore, health care professionals should evaluate individuals for prior dengue infection to avoid vaccinating individuals who have not been previously infected by dengue virus,” the FDA said.

India’s position

In May 2017, India turned down a recommendation of the Subject Expert Committee of the Drug Controller General of India and told Sanofi that there could not be a waiver of the requirement that a drug or vaccine, before being allowed to be marketed in India, would have to undergo phase III clinical trials (that establish safety and efficacy of a drug) on Indian subjects. “We were not convinced by the reasons given for waiver, nor did we think it prudent to go by the results of the phase III clinical trials done abroad. On hindsight, it was a good decision,” said a Health Ministry official. Sanofi had submitted published data of Phase III trials from other countries.

The committee had recommended: “Although, the vaccine does not qualify the requirements of waiver of clinical trial, considering the fact that Dengue is a health problem of major concern in the country and can be life-threatening in certain cases, the committee recommends for Market Authorization of the vaccine in the age group of 18-45 years only with the condition to conduct Phase IV clinical trial in time bound manner...”

Why US has cleared dengue vaccine with conditions, where India standsies.

One million species face extinction:

Biodiversity report matters

Why biodiversity report matters (The Indian Express: 20190508)

<https://indianexpress.com/article/explained/simply-put-why-biodiversity-report-matters-5715922/>

Among the findings that are making global headlines is the assessment that as many as 1 million different species, out of a total of an estimated 8 million plant and animal species, are facing the threat of extinction, more than at any previous time, because of changes brought about in natural environments by human activities.

Why US has cleared dengue vaccine with conditions, where India stands

Tip for reading list: The Man Who Talks To The Dead

Issues and contenders in South Africa's election

One million species face extinction: Why biodiversity report matters

Hawksbill Turtles in coral reef, Maldives. 33% of reef forming corals, sharks and shark relatives are faced with extinction. (Shutterstock.com)

A first-of-its-kind report released on Monday by an international group of scientists, whose findings were reported in The Indian Express Tuesday, is being hailed as one of the most important scientific studies of our time. The report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is the most comprehensive scientific evaluation ever made of the state of our nature, and gives a detailed account of health of the species that inhabit this earth, and the condition of habitats that they live in and depend upon.

Among the findings that are making global headlines is the assessment that as many as 1 million different species, out of a total of an estimated 8 million plant and animal species, are facing the threat of extinction, more than at any previous time, because of changes brought about in natural environments by human activities. The report says that 75% of Earth's land surface and 66% marine environments have been "significantly altered", and that "over 85%" of wetland area had been lost. But, on an average, these trends were less severe on areas controlled or managed by indigenous people and local communities (like tribal communities in India).

Tree stumps in Madagascar; result of deforestation and slash & burn farming. (Shutterstock.com)

What is IPBES

IPBES is a global scientific body very similar in composition and functioning to the better-known Intergovernmental Panel on Climate Change (IPCC) that makes periodic reviews of scientific literature to make projections about the earth's future climate. IPCC's assessment reports, which won it the Nobel Peace Prize in 2007, form the scientific basis on which the international negotiations on climate change have been happening.

One million species at risk of extinction, need transformative changes: UN

IPBES is mandated to do a similar job for natural ecosystems and biodiversity. Formed in 2012, this is the first global assessment report by the IPBES (IPCC, set up in 1988, has produced five assessment reports, and sixth one is under preparation). IPBES has produced a few regional and specialised reports earlier. Like IPCC, IPBES does not produce any new science, it only evaluates existing scientific knowledge to make assessments and projections.

Source: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, first assessment report

Unlike IPCC, however, the IPBES assessment reports are likely to feed into and inform several multilateral processes. The two UN Conventions — Convention on Biological Diversity that addresses biodiversity issues, and the Convention on Combating Desertification that deals with sustainable land management — are likely to be guided by this report in future. It is possible that so would be a host of other international agreements and processes, like the Ramsar Convention on wetlands, the Convention on International Trade in Endangered Species, or the Cartagena Protocol on Biosafety.

Kuta beach, Bali. Plastic pollution has multiplied 10 times since 1980. (Shutterstock.com)

The India connection

The report does not have country-specific information. But as a major biodiversity hotspot, vast areas, especially the coastline, of which are under tremendous stress due to large population, India can identify with most of the trends pointed out in the report.

For example, it says 23% of global land area had shown a reduction in productivity due to degradation, and that between 100 to 300 million people were at an increased risk of floods and hurricanes because of loss of coastal habitats and protection. It says plastic pollution had increased 10 times from 1980, the number of large dams (those with a height of 15 m or more) had reached almost 50,000, and that human population had more than doubled since 1970s, and the number of urban areas had doubled since 1992. All these trends have been clearly visible in the case of India, and bring with them the associated risks to natural ecosystems highlighted in the report.

Netflix testing

Netflix testing weekly plans in India starting at Rs 65: Report (The Indian Express: 20190508)

Netflix Weekly Plans in India: Netflix is testing weekly plans for select users in India, which start for as low as Rs 65 per week for the mobile-only plan.

Netflix, Netflix weekly plans India, Netflix testing weekly plans, Netflix weekly plans, Netflix plan price, Netflix subscription, Netflix cost, Netflix update, Netflix new shows, best movies to watch on Netflix, Netflix basic plan, Amazon prime, Hotstar

However, it is worth noting that Netflix is only testing these options as of now and the plans may never roll out beyond the tests.

Netflix Weekly Plans in India: Netflix is testing weekly plans for select users in India, which start for as low as Rs 65 per week for the mobile-only plan. According to a Gadgets360 report, the video streaming service has also started testing a new mobile-only monthly plan of Rs 250 as well.

The plans seem to have been visible to only select users as of now, though Netflix confirmed to Gadgets360 that it is testing different options in select countries that will let users “watch Netflix on their mobile device for a lower price and subscribe in shorter increments of time”.

Of course, the most affordable mobile-only plans do not come with access to High Definition (HD) or 4K and includes only Standard Definition (SD). People who subscribe to mobile-only plans will only be able to watch Netflix on their smartphone or tablet.

In addition to Rs 65 per week mobile-only plan, more weekly plans that Netflix is said to be testing in India include Rs 125 Basic plan for SD only, Rs 165 Standard plan (HD) for two devices, and Rs 200 Ultra plan (4K) for four devices.

However, it is worth noting that Netflix is only testing these options as of now and the plans may never roll out beyond the tests. The company is expected to make an official announcement if the plans are rolled out for everyone in the future.

Netflix’s weekly plans will likely benefit people who are interested in watching specific shows on the service. So, one will have the option of subscribing to Netflix’s weekly plans to finish watching shows they like when they are released and then unsubscribe in order to avoid paying for the entire month.

In India, Netflix competes with the likes of Amazon Prime and Hotstar. If one compares pricing, Netflix is the most expensive service as both Hotstar Premium subscription and Amazon Prime Video subscription are priced at Rs 999 per year, while Netflix has monthly plans that start at Rs 500 for the basic subscription and go up to Rs 800 per month for premium service.

In addition, Hotstart has a VIP subscription plan as well, which is priced at Rs 365 per year. In the case of Prime Video, users also get access to Amazon’s Prime service, which includes benefits early access to deals, faster shipping, as well as Amazon Prime Music.

Food additives

Food additives could harden arteries: Study (New Kerala: 20190508)

<https://www.newkerala.com/news/read/138799/food-additives-could-harden-arteries-study.html>

: Researchers have claimed that food additives and other cooking ingredients could lead to hardened arteries.

Hardening arteries, or arterial stiffness, is an independent risk factor for heart disease and death, and the mechanisms that contribute to arterial stiffening are not well understood, according to the study published in the Journal of Hypertension.

"Metabolomics can accurately measure the amount of exposures entering the body," said Changwei Li, an author of the study.

Metabolomics is the study of metabolites, which are created each time there is a transfer of energy in the body. Metabolites play a key role in maintaining the body's normal function, and changes in metabolite levels can reflect how environmental factors, like smoking, diet or pollutants, influence health.

"In this study, we identified many metabolites related to coffee drinking, alcohol drinking, Southern foods, dietary supplements, and even pesticides," said Li.

Using the most up-to-date panel of metabolites, Li and his colleagues ran an analysis on participant blood samples, looking for environmental exposures that had an impact on measures of arterial stiffness.

The study found 27 new metabolites associated with arterial stiffness.

"We were able to identify some environmental and lifestyle related-metabolites, build metabolite networks to shown how the body reacts to the environmental exposures, and more importantly, tested the effect of those metabolites on arterial stiffness," said Li.

The majority of these were associated with other known risk factors of arterial stiffness like high bloo pressure, high cholesterol or diabetes.

But some of these metabolites are food additives and cooking ingredients.

For example, the team identified two peptides - gamma-glutamylvaline and gamma-glutamylisoleucine. These are commonly used to enhance the savory taste of the chicken broth.

The study raised the possibility that those additives may cause arterial stiffness. Given the wide usage of those additives, future studies are warranted to investigate their role in arterial stiffness.

Soy protein

Soy protein lowers cholesterol: Study (New Kerala: 20190508)

<https://www.newkerala.com/news/read/138757/soy-protein-lowers-cholesterol-study.html>

As the food authority is planning to remove soy from list of heart-healthy food, researchers through a study evaluated and determined soy protein has the ability to lower cholesterol by a small but significant amount.

According to the study published in the Journal of Nutrition, forty-one trials examined the protein's effects on low-density lipoprotein (LDL) cholesterol, which is often referred to as the "bad cholesterol" because a high amount of it leads to a build-up of cholesterol in arteries.

All 43 studies provided data about "total cholesterol," which reflects the overall amount of cholesterol in the blood.

Researchers found that soy protein reduced LDL cholesterol by three to four per cent in adults, a small but significant amount, noted Dr David Jenkins, the lead author of the study.

"When one adds the displacement of high saturated fat and cholesterol-rich meats to a diet that includes soy, the reduction of cholesterol could be greater. The existing data and our analysis of it suggest soy protein contributes to heart health," Dr Jenkins said.

"We hope the public will continue to consider plant-based diets as a healthy option," Dr Jenkins added.

Depression

AI can detect anxiety, depression in child's speech (New Kerala: 20190508)

<https://www.newkerala.com/news/read/138623/ai-can-detect-anxiety-depression-in-childs-speech.html>

Researchers have developed an artificial intelligence (AI)-based system that can detect signs of anxiety and depression in the speech patterns of young children.

The research published in the Journal of Biomedical and Health Informatics suggests a machine learning algorithm might provide a fast and easy way of diagnosing anxiety and depression --conditions that are difficult to spot and often overlooked in young people.

"We need quick, objective tests to catch kids when they are suffering," said study lead author Ellen McGinnis, PhD candidate at the University of Vermont in the US.

"The majority of kids under eight are undiagnosed," McGinnis added.

Early diagnosis of these conditions is critical because children respond well to treatment while their brains are still developing, but if they are left untreated they are at greater risk of substance abuse and suicide later in life.

For the study, the researchers used an adapted version of a mood induction task called the Trier-Social Stress Task, which is intended to cause feelings of stress and anxiety in the participant.

The researchers picked a group of 71 children between ages 3 and 8 who were asked to improvise a three-minute story, and told that they would be judged based on how interesting it was.

The researcher acting as the judge remained stern throughout the speech, and gave only neutral or negative feedback.

After 90 seconds, and again with 30 seconds left, a buzzer would sound and the judge would tell them how much time was left.

"The task is designed to be stressful, and to put them in the mindset that someone was judging them," McGinnis said.

The children were also diagnosed using a structured clinical interview and parent questionnaire, both well-established ways of identifying internalising disorders in children.

The researchers then used a Machine Learning algorithm to analyse statistical features of the audio recordings of each kid's story and relate them to the child's diagnosis.

They found the algorithm was highly successful at diagnosing children.

"The algorithm was able to identify children with a diagnosis of an internalizing disorder with 80% accuracy, and in most cases that compared really well to the accuracy of the parent checklist," said senior study author Ryan McGinnis from the University of Vermont.

It can also give the results much more quickly -- the algorithm requires just a few seconds of processing time once the task is complete to provide a diagnosis, the study said.

