



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY

Friday

20190301

## Mental disorders

### Spending childhood in greener spaces may prevent mental disorders later (The Tribune: 20190301)

<https://www.tribuneindia.com/news/health/spending-childhood-in-greener-spaces-may-prevent-mental-disorders-later/735651.html>

Children who grow up with greener surroundings have up to 55 per cent less risk of developing various mental disorders later in life, according to a study which emphasised the need for designing green and healthy cities for the future.

An increasing share of the world's population now lives in cities and World Health Organisation estimates that more than 450 millions of the global human population suffer from a mental disorder.

Based on satellite data from 1985 to 2013, researchers from Aarhus University in Denmark have mapped the presence of green space around the childhood homes of almost one million Danes and compared this data with the risk of developing one of 16 different mental disorders later in life.

The study, published in the Journal PNAS, shows that children surrounded by the high amounts of green space in childhood have up to a 55 per cent lower risk of developing a mental disorder.

"With our dataset, we show that the risk of developing a mental disorder decreases incrementally the longer you have been surrounded by green space from birth and up to the age of 10. Green space throughout childhood is therefore extremely important," Kristine Engemann from Aarhus University.

As the researchers adjusted for other known risk factors of developing a mental disorder, they see their findings as a robust indication of a close relationship between green space, urban life, and mental disorders.

"There is increasing evidence that the natural environment plays a larger role for mental health than previously thought. Our study is important in giving us a better understanding of its importance across the broader population," said Engemann.

This knowledge has important implications for sustainable urban planning. Not least because a larger and larger proportion of the world's population lives in cities.

health and access to green space in your local area is something that should be considered even more in urban planning to ensure greener and healthier cities and improve mental health of urban residents in the future," said Jens-Christian Svenning from Aarhus University. — PTI

## **Depression**

### **Working long hour's ups depression risk in women (The Tribune: 20190301)**

<https://www.tribuneindia.com/news/health/working-long-hours-ups-depression-risk-in-women/735648.html>

Women who work more than 55 hours a week are at a higher risk of depression, according to study which found that the same is not true for men.

The study of over 20,000 adults, published in the BMJ's Journal of Epidemiology & Community Health, found that after taking age, income, health and job characteristics into account, women who worked extra-long hours had 7.3 per cent more depressive symptoms than women working a standard 35-40 week.

Weekend working was linked to a higher risk of depression among both sexes, according to the researchers from Queen Mary University of London and University College London in the UK.

Women who worked for all or most weekends had 4.6 per cent more depressive symptoms on average compared to women working only weekdays.

Men who worked all or most weekends had 3.4 per cent more depressive symptoms than men working only weekdays.

"This is an observational study, so although we cannot establish the exact causes, we do know many women face the additional burden of doing a larger share of domestic labour than men, leading to extensive total work hours, added time pressures and overwhelming responsibilities," said Gill Weston, a PhD candidate at UCL.

"Additionally women who work most weekends tend to be concentrated in low-paid service sector jobs, which have been linked to higher levels of depression," said Weston.

The research showed that men tended to work longer hours in paid work than women, and having children affected men's and women's work patterns in different ways: while mothers tended to work fewer hours than women without children, fathers tended to work more hours than men without children.

Two thirds of men worked weekends, compared with half of women. Those who worked all or most weekends were more likely to be in low skilled work and to be less satisfied with their job and their earnings than those who only worked Monday to Friday or some weekends.

Researchers analysed data from 40,000 households across the UK since 2009. Information about working hours, weekend working, working conditions and psychological distress was collected from 11,215 working men and 12,188 working women between 2010 and 2012.

Depressive symptoms such as feeling worthless or incapable were measured using a self-completed general health questionnaire.

"Women in general are more likely to be depressed than men, and this was no different in the study," Weston said.

"Independent of their working patterns, we also found that workers with the most depressive symptoms were older, on lower incomes, smokers, in physically demanding jobs, and who were dissatisfied at work," she said.

"We hope our findings will encourage employers and policy-makers to think about how to reduce the burdens and increase support for women who work long or irregular hours—without restricting their ability to work when they wish to," she added. — PTI

## **Genetic Diseases**

### **Mandatory screening, drug subsidies may cut newborn deaths due to rare diseases (The Tribune: 20190301)**

<https://www.tribuneindia.com/news/health/mandatory-screening-drug-subsidies-may-cut-newborn-deaths-due-to-rare-diseases/735650.html>

India could significantly reduce the deaths of newborn babies caused by rare genetic diseases by making genetic screening mandatory in government hospitals and subsidising the required drugs, experts say.

While there is no formal definition for a rare disease, global health bodies say that it is characterised by three factors—the total number of people having the disease, its prevalence and non-availability of treatment.

"The government is not paying much attention to the cases of rare diseases thinking it as a rare case," Manjit Singh, President of Lysosomal Storage Disorder Support Society of India (LSDSS), told PTI.

"However, there is a need for genetic testing laboratories in the every government hospitals to understand the real problem," he added.

A newborn screening (NBS) test looks for various developmental, genetic, and metabolic disorders in the newborn.

This allows steps to be taken before symptoms develop. Most of these illnesses are extremely rare, but can be treated if caught early.

India currently has over 8,000 patients with rare diseases, which includes genetic disorders like rarest of rare ones such as Hunter Syndrome, Gaucher Disease and Fabry's Disease.

While Fabry's Disease interferes with the body's ability to break down a specific fatty substance, Hunter Syndrome is a serious genetic disorder that interferes with the body's ability to break down specific mucopolysaccharides.

Currently, all rare diseases get diagnosed at a much later stage when treatments are not much effective.

The early diagnosis of such disorders during birth can be much useful in terms of medication enabling the patients to lead a normal life.

According to the Organisation for Rare Diseases India (ORDI), there are 7,000 known rare diseases in India with a total of 70 million rare diseases patients in India.

Currently, only one in 20 Indian patients get diagnosed with a rare disease.

Prasanna Shirol, Founder Director of ORDI, said that almost half of rare disease patients in India are children, an important fact that often does not get highlighted enough.

"We urgently need national and state policies that address the unique requirements of the rare disease community and enable them to lead lives of dignity and self-worth," Shirol told PTI.

"We also need institutions like corporates, schools and colleges to create a more inclusive environment for rare disease patients," he added.

Doctors said that there is also a need for the government to negotiate with the pharmaceutical companies and subsidise the medicines used in rare diseases as they are priced extremely high.

According to the health advocacy groups fighting for the cause of rare diseases in India, the medicines to treat such diseases range anywhere between Rs 1 lakh to Rs 50 lakh per month.

In 2017, the National Policy for Treatment of Rare Diseases (NPTRD) was announced by the Indian government with a corpus of Rs 100 crore to provide financial assistance for the treatment of rare disease patients.

However, in November last year, the health ministry put on hold the policy and the corpus amount, saying the focus was currently on communicable and non-communicable diseases.

Since then there have been several representations to the central government from organisations including LSDSSI seeking reinstating of the policy and funds to support the patients.

ORDI said that it takes an average of seven years to diagnose a rare disease due to lack of awareness and scientific facts.

Around 80 per cent of the rare diseases have identifiable genetic origin and 30 per cent of the patients die before reaching the age of 5 years.

National bodies working for the well being of patients with rare diseases have urged the government for setting up genetic screening laboratories in every government hospitals so that newborns can be screened if they have any life threatening genetic disorder.

At present, only a few top government hospitals such as the All India Institute of Medical Sciences and Post Graduate Institute of Medical Education and Research, Chandigarh apart from the private hospitals have the newborn screening tests, making it extremely costly and

unaffordable for the people from low-income group, a strata from where genetic disorder cases are frequent.

Sunita Bijarnia, Clinical Geneticist, Gangaram Hospital said the decades of research for developing a medicine for rare disease coupled with not enough demand due to limited patients are the reasons behind high cost of the drugs.

"Until the government negotiates with the pharmaceutical companies and subsidises the drugs for genetic rare disorders the problem cannot be solved. And it is of utmost importance to give medicines to such patients to enabling them to lead a normal life," she told PTI.

Bijarnia said that unlike India several nations such as Australia and Philippine have a better system where the government pays for every medical expenses of rare diseases. This helps in the early diagnosis of such medical cases. — PTI

## **DNA**

### **Doctors confirm new type of twin born from one egg and two sperm (The Tribune: 20190301)**

<https://in.reuters.com/article/us-health-reproduction-mosaic-twins/doctors-confirm-new-type-of-twin-born-from-one-egg-and-two-sperm-idINKCN1QG2YH>

(Reuters Health) - Doctors in Australia say they have identified a second case of twins apparently created from one egg and two sperm, a boy-girl combination in whom the mother's DNA is identical in both babies but the father's DNA varies in each twin.

They're being called semi-identical twins and a new study in the New England Journal of Medicine suggests that such twins are extraordinarily rare. The only other reported case was uncovered in 2007.

Virtually all twins are either fraternal (where two eggs and two sperm have created two separate embryos) or identical (where one embryo splits in two before resuming normal development for each child).

"This is confirming there is this third type of twinning where it's not fraternal and it's not identical. It's this strange place in between," chief author Dr. Michael Terrence Gabbett of Queensland University of Technology in Brisbane told Reuters Health in a telephone interview.

Each sperm cell contains half the father's DNA. But it's not identical from sperm to sperm because each man is a mixture of the genetic material from his parents, and each time a slightly different assortment of that full DNA set gets divided to go into a sperm.

For example, some sperm will contain a copy of the father's Y chromosome that makes the child develop into a boy and some will carry the father's X chromosome, which makes the child a girl.

In the case of the Australian twins, who live in Brisbane and are now 4-and-a-half years old, the mother's egg was fertilized with one sperm carrying an X chromosome and one with a Y.

Because an ultrasound taken early in the pregnancy showed that both fetuses shared the same placenta, doctors assumed the fetuses were identical twins.

But when an ultrasound eight weeks later revealed that one child was male and the other female, something considered impossible for identical twins, the Gabbett team knew something extraordinary had happened.

The researchers say it appears that after fertilization, the DNA from the egg and two sperm divided, then got divided up to create three embryos. Two of these had enough egg DNA and sperm DNA to make viable embryos. The remaining embryo, with only sperm DNA, was not viable.

The twin boy and girl were found to have 100 percent of their mother's DNA in common, but were only 78 percent identical in the paternal DNA they carry.

The only other reported instance of so-called sesquizygotic twins was identified in 2007. They were brought to the attention of doctors because one had ambiguous genitalia.

To see if the phenomenon might be more common than doctors believed, the Gabbett team examined an international database of 968 fraternal twins and their parents. None showed the same pattern.

Because of the odd combination of DNA picked up from the two sperm, doctors have been concerned that the twins might be vulnerable to cancer of the reproductive organs.

"It turned out that the girl just had some changes in her ovary that people weren't comfortable with, so unfortunately she had to have her ovaries out," Gabbett said. "The boy is continuing to have his testes monitored" with ultrasound.

The girl also developed a blood clot in her arm, but that's not considered to be related to the unorthodox fertilization.

"Otherwise," Gabbett said, "the two twins are beautiful kids, well and healthy."

**Plastice (The Asian Age: 20190301)**

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=12537240>

■ **Research to help protect oceans from plastic waste by boosting recycled plastics market**

## Upcycling process to give plastic second life

Washington, Feb. 28: Scientists have developed a recycling process that transforms single-use plastic bottles, and fabrics made from a common polyester material into more valuable products with a longer lifespan.

Their research, published in the journal *Nature*, could help protect oceans from plastic waste by boosting the recycled plastics market.

Polyethylene terephthalate (PET) is strong but lightweight, resistant to water, and shatterproof – properties that make it extremely popular among manufacturers.

Although PET is recycla-

### ARCTIC SUMMERS COULD BECOME ICE-FREE WITHIN 20 YEARS

■ The Arctic Ocean could experience ice-free summers within the next 20 years – much earlier than previously predicted.

■ However, a closer examination of long-term temperature cycles in the tropical Pacific points towards an ice-free Arctic in September.

■ Computer models predict climate change will cause the Arctic to be nearly free of sea ice during the summer by the middle of this century, due to a natural, long-term warming phase.



■ Study predicts ice-free Arctic summer sometime between 2030 and 2050.

■ Five years ago, Pacific began to switch from cold to warm phase of the Interdecadal Pacific Oscillation.

ble, most of the 26 million tonnes produced every year ends up in landfills or elsewhere in the environment, where it takes hundreds of years to

biodegrade.

However, even when it is recycled, the process is far from perfect. Reclaimed PET has a lower value than the original and can

only be repurposed once or twice.

“Standard PET recycling today is essentially ‘down-cycling,’” said Gregg Beckham, a Senior

Research Fellow at US Department of Energy’s National Energy Laboratory (NREL).

—PTI

**E- Cigrattee ((The Asian Age: 20190301)**

<http://onlinepaper.asianage.com/asianage-epaper.aspx#page12>



# SMOKER'S REMEDY

**E-cigarette is what will get a smoker to stop smoking. Has the idea clicked?**



## AGE CORRESPONDENT

**Smoking is injurious to health!** A message that was echoing for quite some time. Some say they even used many remedies like nicotine gums to curb the urge to smoke. Alas! They have all failed. Although one such way recently has been researched by scientists that e-cigarettes can help not only curb smoking but also help one. It has been one of the most pressing unanswered questions in public health: Do e-cigarettes actually help smokers quit? Now, the first, large rigorous assessment offers an unequivocal answer: yes.

A study published recently in the *New England Journal of Medicine*, found that e-cigarettes were nearly twice as effective as conventional nicotine replacement products, like patches and gum, for quitting smoking. The success rate was still low — 18 per cent among the e-cigarette group, compared to 9.9 per cent among those using traditional nicotine replacement therapy — but many researchers who study tobacco and nicotine said it gave them the

clear evidence they had been looking for.

The study was conducted in Britain and funded by the National Institute for Health Research and Cancer Research UK. For a year, it followed 886 smokers assigned randomly to use either e-cigarettes or traditional nicotine replacement therapies. Both groups also participated in at least four weekly counseling sessions, an element regarded as critical for success.

"This is a seminal study," said Dr Neal L. Benowitz, chief of clinical pharmacology at the University of California, San Francisco, and an expert in nicotine absorption and tobacco-related illnesses, who was not involved in the project. "It is so important to the field."

Tobacco use causes nearly 6 million deaths worldwide each year, according to the Centers for Disease Control and Prevention. If tobacco use trends continue, the global death tally is projected to reach 8 million deaths annually by 2030.

E-cigarettes provide the nicotine smokers crave without the toxic tar and carcinogens that come

from inhaling burning tobacco. But regulators in the United States, Britain and elsewhere have not approved them to be marketed as smoking cessation tools. They noted that 80 per cent of the study participants who had quit by using e-cigarettes were still vaping at one year, while only nine per cent of the nicotine replacement therapy group was still using nicotine products.

That raised concerns, they wrote, about sustained nicotine addiction and the unknown health consequences of long-term e-cigarette use.

The editorial recommended that e-cigarettes be taken up when other cessation approaches, including behavioural counseling, have failed; that patients use the lowest dose of nicotine possible; that health care providers establish a clear timeline for e-cigarette use. The clinical trial took place from May 2015 to February 2018. Because the smokers were recruited at the clinics, they were already predisposed to quitting, a feather on the scale that could slightly have affect-

ed results. The participants were typically middle-aged, smoked between half a pack and a pack a day and had already tried quitting.

The people using nicotine replacement therapy could select from an array of products, including the patch, gum, lozenge and nasal spray. They were even encouraged to combine them; most did so, typically opting for the patch and an oral therapy.

Because self-reports of smoking abstinence are not considered reliable, researchers measured the quantities of carbon monoxide in the participants' breath, a more precise validation. Dr. Maciej Goniewicz, a co-author of the British study who is now a pharmacologist at the Roswell Park Comprehensive Cancer Center in Buffalo, N.Y., said that the success of the e-cigarettes most likely reflects a combination of factors: "It's about the method of delivery, the quantity of nicotine and the user's behaviour," he said. "E-cigarettes have the advantage that the user decides how and when to puff. Nicotine replacement therapy products have specific instructions, which are different for different products."

Dr Benowitz noted that the higher quit rates and

compliance among e-cigarette users could be additionally explained because those subjects expressed more satisfaction with the devices than did the other group with their products.

In their editorial, Dr. Borrelli and O'Connor pointed to other research on smoking cessation therapies: In one study nicotine-replacement therapy and the antidepressant bupropion (Wellbutrin) achieved slightly higher abstinence rates than did e-cigarettes in this latest trial. The prescription drug varenicline (Chantix) has performed even moderately better. Moreover, these products have been proven safe, they said.

Sunit Narula, general secretary, Infinite Achievers, said, "We should refer to the studies like these and hence refer to both sides of a coin before arriving at any biased conclusion of blaming a new product like e-cigarettes or ENDS, (Electronic Nicotine Delivery System) as only harmful without referring to any comparable studies across the globe. We should not make an Indian consumer deprived of a safer option available. We should leave it on to the consumer to choose a less harmful product."

**E-cigarettes were nearly twice as effective as conventional nicotine replacement products**

## **Arthritis**

### **New machine learning technique can boost treatment for arthritis in kids (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107667/new-machine-learning-technique-can-boost-treatment-for-arthritis-in-kids.html>

Toronto, Feb 28 : Researchers have developed a novel machine learning (ML) technique that could predict the severity of arthritis in children, eliminating unnecessary treatments and potential side effects, and paving the way for customised care.

Arthritis, which can affect children besides the elderly, occurs when the immune system mistakes the body's own cells for foreign invaders, attacking the lining of the joints to cause swelling, pain and possibly long-lasting damage.

The findings, published in the journal PLOS Medicine, showed that the algorithm was able to classify patients into seven distinct groups according to the patterns of swollen or painful joints in the body.

It also accurately predicted which children will go into remission faster and which ones will develop a more severe form of the disease.

"Knowing which children will benefit from which treatment at which time is really the cornerstone of personalised medicine and the question doctors and families want answered when children are first diagnosed," said Rae Yeung, Professor at the University of Toronto in Canada.

"Identifying this group of children early will help us target the right treatments and prevent unnecessary pain and disability from ongoing active disease," said Yeung.

For the study, the team analysed the clinical data of 640 children.

Currently, there is no cure and the treatment consists of progressively more aggressive and costly medications.

Although the treatment is very effective in some children, it is also very expensive. Also, it is not clear what the long-term effects are.

## **Fast foods**

### **Fast foods less healthy now than 30 years ago: Study (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107572/fast-foods-less-healthy-now-than-30-years-ago-study.html>

Despite the addition of healthy foods such as salads and sprouts to the menu, fast food is less healthy today than it was 30 years ago, and is increasingly contributing to obesity, say researchers.

The study, led by Boston University, demonstrates that the calories, portion sizes, and sodium content overall have worsened (increased) over time and remain high.

"Given the popularity of fast food, our study highlights one of the changes in our food environment that is likely part of the reason for the increase in obesity and related chronic conditions over the past several decades, which are now among the main causes of death," said lead investigator Megan A. McCrory, from the varsity.

"Our study offers some insights on how fast food may be helping to fuel the continuing problem of obesity and related chronic conditions," McCrory added.

For the study, published in the Journal of the Academy of Nutrition and Dietetics, the team examined changes offered by 10 of the top fast-food restaurants over the 30-year period from 1986 to 2016.

They found that the total number of starters, desserts and side dishes increased by 226 per cent, or 22.9 items per year.

Calories in all three categories increased significantly, with the largest increases in desserts (62 kcals per decade), followed by starters (30 kcals per decade).

These increases were mainly due to the increase in portion size, which was statistically significant in entrees (13 grams per decade) and desserts (24 grams per decade) categories.

Sodium also increased significantly in all menu categories, while iron levels increased significantly in desserts.

Changes in calcium and iron levels, particularly in desserts, is a positive development since these nutrients are important for good bone mass and preventing anaemia.

There are, however, better sources (foods) that do not come with high calories and sodium, the researchers said.

"We need to find better ways to help people consume fewer calories and sodium at fast food restaurants. The requirement that chain restaurants display calories on their menus is a start," McCrory said.

## **Oral typhoid vaccine**

### **Oral typhoid vaccine can protect against other infections: Study (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107563/oral-typhoid-vaccine-can-protect-against-other-infections-study.html>

Oral typhoid vaccination, which has weakened strains of a common bacteria, can also protect against other infections potentially saving lives in the developing world, the results of a clinical trial revealed.

Typhoid fever is a bacterial bloodstream infection caused by Salmonella Typhi that is estimated to affect between 11-18 million people and cause between 128,000-190,000 deaths annually worldwide.

According to the US Centers for Disease Control and Prevention (CDC), there are two vaccines to prevent typhoid. One is an inactivated (killed) vaccine gotten as a shot. The other is a live, attenuated (weakened) vaccine which is taken orally (Ty21a).

The findings, published in the Science Advances journal, suggest that Ty21a can strengthen the immune response against subsequent, unrelated infections.

"Live-attenuated Salmonella vaccines are low-cost, well-tolerated and easily administered," said lead author Shaun Pennington from the Liverpool School of Tropical Medicine in the UK.

"These vaccines could potentially be included in global vaccination programmes, not just for their impact on Salmonella, but also for their off-target, non-specific beneficial effects," Pennington added.

Previous evidence has suggested that some live-attenuated vaccines, such as those for measles and polio, can stimulate the human immune system to generate a wider protective response and lower all-cause mortality.

In order to investigate whether Salmonella vaccines might offer similar protection, the researchers vaccinated a small group of 16 healthy adults in the UK with the Ty21a vaccine and studied its impact on their immune system over the course of six months.

The changes observed to levels of infection fighting white blood cells (monocytes) and immune system messengers (cytokines) suggest that Ty21a can strengthen the immune response against subsequent, unrelated infections.

"Salmonella vector vaccines could provide Salmonella-specific protection, vectored-pathogen protection and non-specific protection, making live-attenuated Salmonella a hugely powerful 'triple threat' tool for global vaccine development," said Professor Melita Gordon from the University of Liverpool.

## **Pregnancy**

### **First semi-identical twins identified in pregnancy (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107549/first-semi-identical-twins-identified-in-pregnancy.html>

Australian doctors have identified a set of semi-identical twins -- the first set to be ever identified during gestation, and only the second known case of sesquizygotic twins in the world.

Semi-identical or sesquizygotic twins represent a third type of "twinning" apart from the identical (zygotic) and fraternal (dizygotic) twins. It's an extremely rare phenomena that results when two sperms fertilise the same egg.

The Australian pair, born in 2014, was the first to have been observed in the womb.

The twins -- a boy and a girl -- were born at the Royal Brisbane and Women's Hospital, according to the report in The New England Journal of Medicine (NEJM).

The five-year-old boy and girl are identical (monozygotic) on their mother's side, sharing 100 per cent of their mother's DNA, but are like siblings on their father's side, sharing only a proportion of their father's DNA.

"It is likely that the mother's egg was fertilised simultaneously by two of the father's sperm before splitting," said Professor Nicholas Fisk at the University of New South Wales (UNSW), who led the foetal medicine team at the hospital.

According to Fisk, the mother's ultrasound at six weeks showed a single placenta and positioning of amniotic sacs that indicated she was expecting identical twins. But an ultrasound at 14 weeks showed the twins were male and female, which is not possible for identical twins.

If one egg is fertilised by two sperms, it results in three sets of chromosomes, one from the mother and two from the father, which are typically incompatible with life and the embryos usually do not survive, explained Michael Gabbett, clinical geneticist at Queensland University of Technology (QUT).

But in this case "the fertilised egg appears to have equally divided up the three sets of chromosomes into groups of cells, which then split into two, creating the twins", Gabbett said.

Sesquizygotic twins were first reported in the US in 2007. The twins came to doctors' attention in infancy after one was identified with ambiguous genitalia.

On investigation of mixed chromosomes, doctors found the boy and girl were identical on their mother's side, but shared around half of their paternal DNA.

## **Oesophageal cancer therapeutics**

### **Newly identified drug targets could open door for oesophageal cancer therapeutics (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107441/newly-identified-drug-targets-could-open-door-for-oesophageal-cancer-therapeutics.html>

A new research has found that blocking two molecular pathways that send signals inside cancer cells could stave off oesophageal adenocarcinoma (EAC), the most common oesophageal malignancy in the United States.

The study was conducted at the Case Western Reserve University School of Medicine. Researchers identified the pathways using advanced computational and genetic analyses of

tumour biopsies from EAC patients. They found 80 percent of tumours had unusually active genes related to two specific pathways, and that exposing the cells to pathway inhibitors stymied EAC tumour growth in mice. The results of the study, published in *Gastroenterology* point to two signaling pathways (controlled by JNK and TGF-beta proteins, respectively) as contributing to EAC tumours.

The pathways represent molecular chain reactions that were overactive in patient tumour cells, but not in biopsies from patients with non-cancerous oesophageal conditions, including Barrett's Oesophagus.

Harmful effects of these pathways could be reduced by turning down JNK or TGF-beta activity. These findings suggest a rationale for testing JNK/TGF-beta-targeted therapies as a new treatment approach in this increasingly prevalent and lethal cancer, said senior author Kishore Guda.

National Cancer Institute estimates, only 20 per cent of patients diagnosed with EAC survive five years. Patients struggle to swallow as tumours and cancer cells narrow their oesophagus. Some require nasogastric feeding tubes in end stages of disease. Limited available treatments to shrink tumours include surgery, radiation, or chemotherapy, but the majority of EAC tumours are resistant.

Targeted therapies are virtually non-existent, Guda said, adding, Treatment advancements are also slowed because we don't know exactly what molecular signals drive EAC pathogenesis.

In the new study, Guda and colleagues collected 397 biopsy specimens to find common mechanisms that underlie EAC tumour progression. They integrated computational and genetic analyses to identify signaling pathways highly active in EAC. They compared EAC biopsies to those collected from patients with conditions that often precede EAC, but who did not develop the cancer.

After finding JNK and TGF-beta pathways to be overactive only in EAC biopsies, they then incubated EAC tumour cells with therapeutic small molecules designed to block the pathways.

Exposure to JNK or TGF-beta inhibitors reduced the ability of EAC cells to proliferate, migrate, or form tumours when transplanted into mice. Several mice had near total regression of tumour growth following treatment.

Combining JNK and TGF-beta pathway inhibitor treatments further prevented cancer cell growth, but more studies are needed to understand synergy between the pathways during EAC progression.

EAC tumour cells' reliance on the TGF-beta pathway was unexpected given its widely recognised role as a cancer suppressor, said Guda's co-senior author on the study. The difference, Varadan said, potentially lies in different roles for TGF-beta in different stages of EAC development.

Varadan added, In normal esophageal cells, TGF-beta acts as a gatekeeper by inhibiting uncontrolled cell growth.

As EAC develops, TGF-beta switches from a growth suppressor to a growth promoter. This is unlike its function in other cancers such as those arising in the colon. Varadan said, adding,

Our unique application of advanced mathematical modelling that we developed allowed us to tease out these intricate mechanisms, which would have otherwise been missed.

The results open a new targeted therapeutic avenue for EAC, and lay the foundation for studies in humans.

## **Colon cancer**

### **Colon cancer growth reduced by exercise: Study (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107428/colon-cancer-growth-reduced-by-exercise-study.html>

A new study conducted by The University of Queensland in conjunction with the University of Waterloo, Ontario, has found that after a short session of high intensity interval training (HIIT), growth of colon cancer cells was reduced, and this also increased indicators of inflammation.

The fact that exercise may play a role in reducing the growth of colon cancer cells has been published in The Journal of Physiology.

For a long time, the focus on exercise has been on the positive changes in the body that occur following a longer period of training. However, these findings suggest that the effects following a single session of HIIT, an exercise regime involving short, high energy bursts are also important.

According to the study, the changes following HIIT suggest that repeated exposure to the acute effects of exercise may contribute to the fight against the cancer. These results reinforce the importance of doing regular exercise and maintaining a physically active lifestyle.

The study involved colorectal cancer survivors completing either a single session of HIIT or 12 sessions over 4 weeks. Their blood samples were collected and were then analysed to study the growth of colon cancer cells.

Speaking about the study, James Devin, lead author said, We have shown that exercise may play a role in inhibiting the growth of colon cancer cells. After an acute bout of HIIT there were specific increases in inflammation immediately after exercise, which are hypothesised to be involved in reducing the number of cancer cells.

According to researchers, this suggests that a physically active lifestyle may be important in tackling human colorectal tumours. They would now like to look at how these changes in growth occur and understand the mechanisms by which biomarkers in the blood can impact cell growth.

## **Child anxiety**

### **Child anxiety could be factor in school absences: Study (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107427/child-anxiety-could-be-factor-in-school-absences-study.html>

A new research now finds that anxiety can be a factor in poor school attendance among children and young people.

The study, by the University of Exeter Medical School conducted a systematic review, which analyses all available evidence in the field.

The study, published in *Child and Adolescent Mental Health*, increases our understanding of the link between anxiety and poor school attendance, particularly when unexcused.

The research, supported by the Wellcome Trust and the National Institute for Health Collaboration for Leadership in Applied Health Research and Care (CLAHRC) South West Peninsula (PenCLAHRC), says more studies are needed that follow children over time to clearly disentangle whether the anxiety leads to poor school attendance or the other way round.

The team categorised school attendance into the following categories: absenteeism (i.e. total absences); excused/medical absences; unexcused absences/truancy; and school refusal, where the child struggles to attend school due to emotional distress, despite awareness from parents and teachers.

Findings from eight studies suggested a surprising association between truancy and anxiety, as well as the expected link between anxiety and school refusal.

Lead author Katie Finning said, Anxiety is a major issue that not only affects young people's schooling, but can also lead to worse academic, social and economic outcomes throughout life. It's important that we pick up the warning signs and support our young people as early as possible. Our research has identified a gap of high-quality studies in this area, and we urgently need to address this gap so that we best understand how to give our young people the best start in life.

Professor Tamsin Ford, who was involved in the research, further added School staff and health professionals should be alert to the possibility that anxiety might underlie poor school attendance and can also cause lots of different physical symptoms, such as tummy and headaches.

Lots of things about school can trigger anxiety in children and it is important to realise that while we all get anxious about somethings, anxiety that is severe can have a major impact on children's development.

The researchers concluded that anxiety is highly treatable and there are effective treatments. It is also important to understand that anxiety can lead to impulses to avoid the thing that makes

oneanxious. Although this avoidance reduces anxiety in the short term, it makes it even harder to cope with the trigger next time and so makes the problem worse.

## **Steroid injections**

### **Steroid injections linked to lower infant birth weights: Study (New Kerala: 20190301)**

<https://www.newkerala.com/news/read/107289/steroid-injections-linked-to-lower-infant-birth-weights-study.html>

Steroid injections given to mothers at risk of giving birth prematurely are likely to deliver babies with lower body weights, says a new study.

The study showed that pre-term babies whose mothers received antenatal corticosteroid therapy (ACT) on average weighed 220 grams less than infants who had not received treatment.

The weight difference was 141 grams for near term babies and 89 grams for full-term babies.

In addition, babies who received ACT but delivered at term were also smaller in size when matched against babies born at term without the treatment.

"We have known from animal studies that steroid treatment could affect foetal growth. It is still unclear whether the reduction in birth weight of the treated infants is directly caused by the drug or due to the complications that led to the treatment," said Professor Alina Rodriguez from the University of Lincoln.

"This study adds weight to calls for a review of the current guidelines for management of threatened pre-term birth and for who should receive steroid treatment," Rodriguez added.

For the study, the team used data from 2,78,508 births to see if the link between reduced birth weight and size was related to the steroid treatment or to other factors.

The findings, published in the journal PLOS Medicine, showed that more than four per cent of children were born pre-term (before 37 weeks).

A total of 4,887 women were given ACT, and 2,173 exposed babies were born at term (37 weeks).

The fact that this treatment may reduce the foetal growth should be considered in future research and recommendations, suggested Marjo-Riitta Jarvelin, Professor from the varsity.

Worldwide, about 1.5 million babies are born premature annually.

Complications resulting from premature birth, especially those related to breathing problems, are the leading cause of death in infants and morbidity in survivors. Therefore, ACT is used before birth to help mature the lungs rapidly.

**Ayushman Yojana (Hindustan: 20190301)**

[http://epaper.livehindustan.com/imageview\\_130084\\_97217204\\_4\\_1\\_01-03-2019\\_i\\_9.pagezoomsinwindows.php](http://epaper.livehindustan.com/imageview_130084_97217204_4_1_01-03-2019_i_9.pagezoomsinwindows.php)

# आयुष्मान योजना : हर पांच सेकेंड में एक मरीज भर्ती

## दावा

नई दिल्ली (व.सं.)। आयुष्मान भारत योजना के तहत हर पांच सेकेंड में एक गरीब मरीज को इलाज के लिए अस्पताल में भर्ती किया जा रहा है।

अभी तक दो करोड़ लोगों को स्वास्थ्य बीमा का कार्ड मिल भी चुका

है। गुरुवार को दिल्ली में पहली बार आयोजित आयुष्मान भारत सम्मेलन में राष्ट्रीय स्वास्थ्य प्राधिकरण के सीईओ डॉ. इंदुभूषण ने यह जानकारी दी। उन्होंने कहा कि पीएम जन आरोग्य योजना के तहत 13.5 लाख मरीज भर्ती हो चुके हैं। इन मरीजों के इलाज में 18 हजार करोड़ रुपये खर्च हुए हैं।

**Khasara (Hindustan: 20190301)**

[http://epaper.livehindustan.com/imageview\\_130088\\_97920346\\_4\\_1\\_01-03-2019\\_i\\_13.pagezoomsinwindows.php](http://epaper.livehindustan.com/imageview_130088_97920346_4_1_01-03-2019_i_13.pagezoomsinwindows.php)

# बढ़ने लगा है खसरे का खतरा!

विश्व स्वास्थ्य संगठन के अनुसार दुनिया में खसरे के मामलों में बढ़ोतरी देखने को मिल रही है। देश में पोलियो के समान खसरा मुक्ति के लिए भी अभियान स्तर पर कार्य जारी है। कैसे करें अपना बचाव, बता रही हैं स्वाति गौड़

बचपन में हुए खसरे यानी मीजल्स की बुरी और कष्टदायी बर्तन में ताउम्र रहती हैं। पूरे शरीर पर छोटे-बड़े सफेद व लाल चकते निकल आना, तेज बुखार, सुस्ती, नाक बहना, आंखें लाल, खान-पान पर पाबंदी और घर से निकलना भी बंद। जाहिर है बच्चे और अभिभावक, दोनों के लिए समय परेशानी भरा होता है। खसरा, आमतौर पर बचपन में ही होता है। भारत ही नहीं, पूरी दुनिया में खसरे से होने वाली मौतों का आंकड़ा साल दर साल बढ़ता ही जा रहा है। साल 2015 में खसरे से विश्व भर में 1 लाख 34 हजार लोगों की मौत हो गयी थी। इनमें से करीब 36 प्रतिशत, यानी लगभग 49,200 मौतें अकेले भारत से हुई थीं। इसे देखते हुए भारत सरकार की ओर से पोलियो की तरह ही अब खसरा मुक्त भारत अभियान पर भी कार्य किया जा रहा है, जिसके तहत साल 2020 तक देश को खसरा मुक्त बनाने का लक्ष्य रखा गया है।



## टीकाकरण है जरूरी

खसरे से बचाव का सुरक्षित व कारगर उपाय, टीकाकरण है, जिसे मीजल्स-मप्स-रुबेला वैयसीन (एमएमआर) के नाम से जाना जाता है। खसरे का पहला टीका बच्चे को 12 से 15 माह की उम्र के बीच दिया जाता है। दूसरा टीका 4 से 6 साल की उम्र के बीच लगाते हैं। यदि निश्चित आयु पर टीका ना लगवाया गया हो तो बाद में जरूर लगाया लेना चाहिए।

जानलेवा भी हो सकता है। खसरा दो प्रकार का होता है।

● पहला है मीजल्स जो कि रुबिओला नामक वायरस से फैलता। ● दूसरा है जर्मन मीजल्स, जो रुबेला नामक वायरस से फैलता है। इसका अंतिम अजन्मे शिशुओं में ज्यादा होता है।

दरअसल, जब संक्रमित व्यक्ति छींकता या खसरा है तो उसके मूँह या नाक से निकलने

## ना करें नजरअंदाज

आमतौर पर खसरे के लक्षण संक्रमण के 10 या 12 दिन बाद दिखाई देने लगते हैं, जिसमें तेज बुखार, नाक बहना, आंखें लाल हो जाना, आंखों में जलन, खासी होना शरीर पर छोटे-छोटे लाल चकते होना शामिल है। इसके अलावा मूँह के अंदर वाले हिस्से में छोटे-छोटे सफेद टांग बगन जैसी

## ऐसे होता है उपचार

खसरे का इलाज दवाओं द्वारा तो किया ही जाता है, साथ ही इसमें खानपान की भी अहम भूमिका होती है। यह एक वायरस जनित रोग है, जो 2 से 3 हफ्तों में ठीक होने लगता है, लेकिन खानपान में कुछ बातों का परहेज रखकर संक्रमण को तकलीफ को कम किया जा सकता है।

- तेज बुखार होने पर डॉक्टर की सलाह पर पैरासिटामॉल ली जा सकती है।
- गर्ते में खराश और दर्द होने पर गुनगुना पानी से मसारे करने पर आराम मिलता है।
- खसरे से प्रभाव गरीज को खुले और हवादार कमरे में रखना चाहिए।
- लगातार थोड़ी-थोड़ी देर में गुनगुना पानी पीने से भी राहत मिलती है।
- दानी में खुजली और जलन होने पर डॉक्टर की सलाह पर कैलेमाइन लोशन लगाया जा सकता है।



देखने की सलाह दी जाती है, क्योंकि इससे आंखों पर जोर पड़ता है। ● खसरे के दौरान सिर में कंजी ना करें और ना ही किसी प्रकार के कॉस्मेटिक्स का इस्तेमाल करना चाहिए।

**Dental Health ((Hindustan: 20190301)**

[http://epaper.livehindustan.com/imageview\\_130088\\_97963878\\_4\\_1\\_01-03-2019\\_i\\_13.pagezoomsinwindows.php](http://epaper.livehindustan.com/imageview_130088_97963878_4_1_01-03-2019_i_13.pagezoomsinwindows.php)

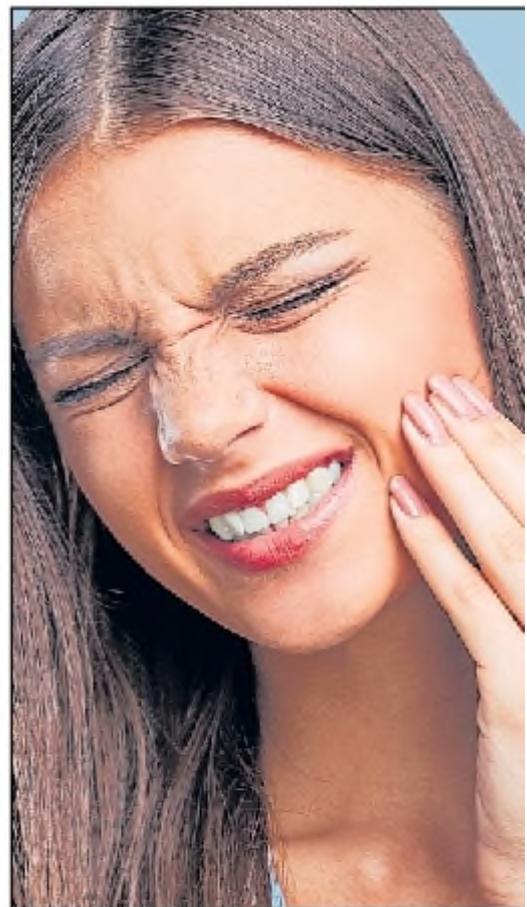
# दांतों की झनझनाहट है, तो कारण भी जानें

दांतों में होने वाली झनझनाहट यानी टूथ सेंसिटिविटी आम समस्या है। हाल के एक अध्ययन के अनुसार हर 8 में से एक व्यक्ति सेंसिटिव दांतों की समस्या से परेशान है। अगर ठंडा या गर्म खाने पर दांतों और मसूड़ों में तेज झनझनाहट या दर्द होता है तो इसे बढ़ावा न दें। सही कारण जानें...

जब भी हम बहुत ठंडी या गरम चीज खाते हैं, तो अचानक दांतों में तेज दर्द या झनझनाहट होने लगती है। यह झनझनाहट किसी एक दांत में भी हो सकती है और सभी दांतों में भी। कभी-कभी ये समस्या मुंह में हवा खींचने पर भी हो सकती है। ऐसा समस्या के ज्यादा गंभीर होने पर होता है।

## क्यों होती है झनझनाहट

डेंटल सर्जन एंड इम्प्लांटोलॉजिस्ट एवं इंडियन डेंटल एसोसिएशन के प्रवक्ता डॉ. अवधेश तिवारी बताते हैं, 'दांत का वो भाग, जो मुंह के अंदर दिखाई देता है, उसे हम क्राउन कहते हैं और जो भाग मसूड़े के अंदर होने की वजह से दिखाई नहीं देता उसे हम रूट या जड़ कहते हैं।



सुरक्षा करती है। अगर यह इनेमल झड़ने या कम होने लगता है, तो

## तंबाकू

तंबाकू के पौधे से बने प्रोटीन से होगा गठिया का इलाज (**Dainik Gagan: 20190301**)

[https://epaper.jagran.com/epaper/article-01-Mar-2019-edition-delhi-city-page\\_21-7027-7072-4.html](https://epaper.jagran.com/epaper/article-01-Mar-2019-edition-delhi-city-page_21-7027-7072-4.html)

तंबाकू के पौधों में कई बीमारियों के उपचार की संभावनाएं दिखी हैं। शोधकर्ताओं का कहना है कि तंबाकू के पौधों का उपयोग एक एंटी-इंफ्लेमेटरी प्रोटीन की उत्पत्ति के लिए किया जा सकता है। इससे गठिया, टाइप-2 डायबिटीज, स्ट्रोक और डिमेंशिया जैसे रोगों के लिए ज्यादा प्रभावी और किफायती इलाज तैयार किया जा सकता है।

कनाडा की वेस्टर्न ओंटारियो यूनिवर्सिटी और लॉसन हेल्थ रिसर्च इंस्टीट्यूट के शोधकर्ताओं ने बड़ी मात्रा में मानव प्रोटीन इंटरल्युकिन 37 (आइएल-37) की उत्पत्ति के लिए तंबाकू के पौधों का उपयोग किया। यह प्रोटीन स्वाभाविक रूप से मानव किडनी में बेहद मामूली मात्रा में उत्पन्न होती है। वेस्टर्न ओंटारियो के प्रोफेसर टोनी जेवनिकर ने कहा, 'यह प्रोटीन शरीर में सूजन को प्रभावी रूप से नियंत्रित करता है। यह प्रारंभिक परीक्षणों में इंफ्लेमेटरी और ऑटोइम्यून रोगों के उपचार में प्रभावी पाया गया है।' -आइएनएस