



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE Day
Tuesday 20190402

Malnutrition

Malnutrition claimed 244 lives in 4 years in Delhi hospitals, reveals RTI query (The Hindu: 20190402)

<https://www.thehindu.com/news/cities/Delhi/malnutrition-claimed-244-lives-in-4-years/article26706599.ece>

City sees cases of nutrition deficiency, obesity-related diseases

The Capital, from 2013 to 2016, recorded 244 deaths due to malnutrition in city hospitals, reveals an RTI reply from the Delhi government's Directorate of Economic and Statistics and Office of the Chief Registrar (births and deaths).

"In Delhi, the population most vulnerable to deaths due to malnutrition includes children, elderly, socio-economically disadvantaged uninsured, low-income group children, the homeless, patients with HIV and other chronic health conditions, including mental illness," explained senior Dietician Mansi Chaudhary at Fortis Hospital, Shalimar Bagh.

In India, 23% of women and 20% of men are considered undernourished while 21% of women and 19% of men are overweight or obese, according to figures released by the Union Health Ministry.

"Delhi too is seeing malnutrition and obesity-related diseases running parallel. There is a simultaneous occurrence of over nutrition and undernutrition among children and adults," said RTI activist Rajhans Bansal who had sought the information.

Malnutrition claimed 244 lives in 4 years in Delhi hospitals, reveals RTI query

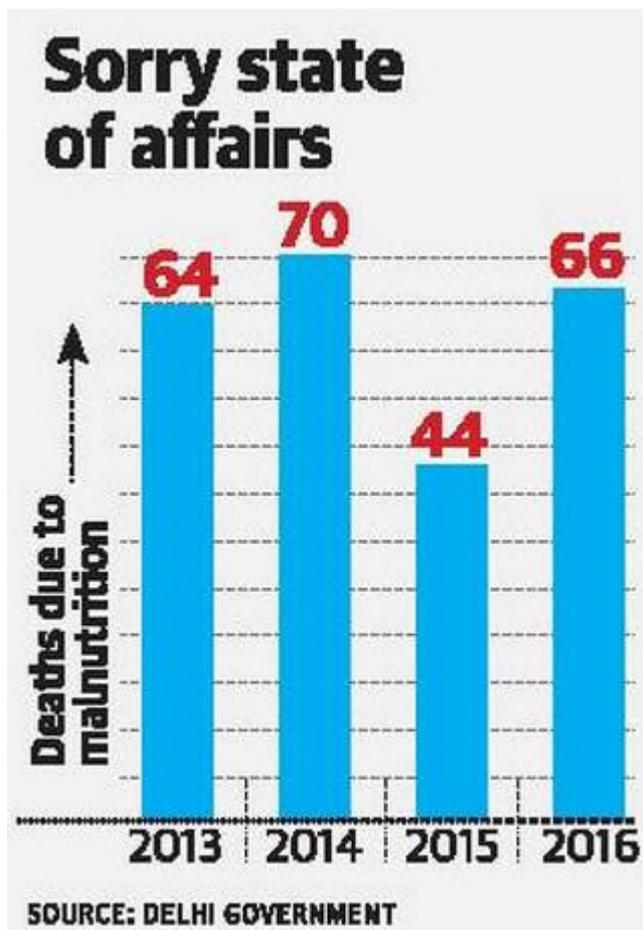
Serious burden

According to Ms. Chaudhary, Delhi too as the rest of the country faces a serious burden of undernutrition which includes childhood stunting, anaemia in women of reproductive age and overweight adult women.

“In India, malnutrition problem results not from calorie intake but from dependence on a carbohydrate-based diet low in protein and fat. Another factor triggering malnutrition is inadequate sanitation which triggers and increase infection rates,” she added.

“In Delhi, children from urban slums are at a particular risk, especially newborns and infants [0-36 months] whose health entirely depends on the availability of the mother to breastfeed, the ability of the caretaker and household to provide nutritious meals, the quality of the public healthcare system and overall community support, said Pooja Mahajan, Nutritionist, BLK Super Speciality Hospital.

She explained that the causes of malnutrition includes lack of a balanced diet, poverty, illiteracy and ignorance, lack of proper sanitation, faulty infant feeding practices and early age of marriages. “Women education and literacy programmes can play an important role in improving the nutritional status of children,” said Dr. Mahajan.





Vitamin C doses

Vitamin C doses may shorten ICU stay (The Tribune: 20190402)

In six trials, orally administered vitamin C with an average dose of 2 grams per day reduced the length of ICU stay on average by 8.6 per cent. IStock

Administering vitamin C to patients in intensive care unit (ICU) can help shorten their stay, scientists say.

The researchers from University of Sydney in Australia and University of Helsinki in Finland carried out a systematic review of vitamin C for ICU patients.

They identified 18 relevant controlled trials, and 12 of them were included in the meta-analysis on the length of stay. On average, vitamin C administration shortened ICU stay by 7.8 per cent.

In six trials, orally administered vitamin C with an average dose of 2 grams per day reduced the length of ICU stay on average by 8.6 per cent.

“Vitamin C is a safe, low-cost essential nutrient. Given the consistent evidence from the trials published so far, vitamin C might be administered to ICU patients, although further studies are needed to find out optimal protocols for its administration,” researchers said.

“A few common cold studies have indicated that there may be a linear dose response for vitamin C on common cold duration for up to 6 and 8 grammes per day,” they said.

“Evidently the dose response for doses higher than 2 grammes per day should also be investigated for ICU patients,” they added.

Given that vitamin C has shown diverse effects on medical conditions, it may influence practical outcomes such as the length of ICU stay, irrespective of the medical conditions affecting a patient, scientists say. PTI

Genetic mutation

No pain, no gain (Indian Express: 20190402)

A genetic mutation offers freedom from suffering, physical and mental. But is it worth it?

<https://indianexpress.com/article/opinion/editorials/pain-sensation-jo-cameron-genetic-mutation-faah-gene-anandamide-5653566/>



The simplest form of learned behaviour is based on an instinct so distinct that it almost defies explanation: Pleasure good, pain bad. Pain tells us when the body is in distress and the anguish it causes is an important signal that assists survival. Its cousins in the mind — fear, anxiety, panic — too are essential to the fight-or-flight response hardwired into a lot of organic life. Traditionally, it is only through much spiritual labour and physical hardship that human beings have claimed to move beyond pain and fear, the circular chain of causality they engender, and on to enlightenment. Recently, though, the discovery of mutations of a previously unknown gene in Jo Cameron, a 71-year-old English woman, which make her almost impervious to pain as well as fear, anxiety or panic, make it seem that even the chances of attaining nirvana are a roll of the dice.

Cameron has had broken limbs, been in accidents, gone through childbirth — all without the excruciating pain that usually accompanies such incidents. It was only when orthopaedic conditions were discovered in an x-ray that doctors got a hint of her condition, and the subsequent investigations revealed that oddities in a gene called FAAH have led to Anandamide, a chemical produced by the body, being improperly broken down and thus acting in a manner not dissimilar to cannabis. Anandamide affects the sensation of pain, mood and memory. Cameron's mutation could hold the key to developing gene therapies to assist in the management of chronic pain, both mental and physical.

But apart from its scientific and social value, Cameron's lack of suffering poses another question: Is she really better off than the rest of us? She may not have felt it, but her body has suffered. She may not have known it, but the world has a lot to be scared of. There is a reason transcendence takes effort. Without pain and fear, experience is just a little incomplete.

Disability

One hour of weekly brisk walk staves off disability (The Tribune: 20190402)

<https://www.tribuneindia.com/news/health/one-hour-of-weekly-brisk-walk-staves-off-disability/751632.html>

Just one hour a week of brisk walking may stave off disability in older adults with arthritis pain, aching or stiffness in a knee, hip, ankle or foot, according to a study unveiled on Monday.

“This is less than 10 minutes a day for people to maintain their independence. It's very doable,” said Dorothy Dunlop, a professor at Northwestern University in the US.

“This minimum threshold may motivate inactive older adults to begin their path towards a physically active lifestyle with the wide range of health benefits promoted by physical

activity,” said Dunlop, lead author of the study published in the American Journal of Preventive Medicine.

About two in five people with osteoarthritis—most of whom have it in their lower joints—develop disability limitations, researchers said.

The study found an hour of weekly moderate-to-vigorous physical activity allowed older adults to maintain their ability to perform daily tasks like getting dressed or cross a street before a traffic light walk signal changed.

The weekly hour of exercise reduced their risk of mobility disability by 85 per cent and their risk of activities of daily living disability by almost 45 per cent.

Four years after the start of the study, 24 per cent of adults who did not get the weekly hour of brisk physical activity were walking too slowly to safely cross the street, and 23 per cent reported problems performing their morning routine.

The researchers analysed four years of data from more than 1,500 adults in the national Osteoarthritis Initiative from Baltimore, Pittsburgh, Columbus and Pawtucket, Rhode Island.

All the adults had pain, aching or stiffness in lower extremity joints from osteoarthritis but were free of disability when they began the study. Their physical activity was monitored using accelerometers.

“Our goal was to see what kind of activity would help people remain free of disability,” Dunlop said.

Guidelines in the US recommend older adults with arthritis should participate in low-impact activity.

For substantial health benefits including reducing the risk for heart disease and many other chronic diseases, these guidelines recommend older adults participate in at least 2.5 hours a week of moderate-intensity activity.

However, that level of activity can be daunting for inactive older adults with lower extremity pain, Dunlop said.

“We hope this new public health finding will motivate an intermediate physical activity goal. One hour a week is a stepping stone for people who are currently inactive. People can start to work towards that,” Dunlop said.

Sleeping (The Asian Age: 20190402)

HEALTH IS | WEALTH Garment with sensors to monitor heartbeat & sleep posture

'Smart' pajamas to help you sleep

Boston, April 1: Scientists have developed 'smart' pajamas embedded with self-powered sensors that provide unobtrusive and continuous monitoring of heartbeat, breathing and sleep posture – factors that play a role in how well a person slumbers.

The garment called 'Phyjama' could give ordinary people, as well as clinicians, useful information to help improve sleep patterns, said researchers from the University of Massachusetts in the US.

"Our smart pajamas overcame numerous technical challenges," said Trisha L. Andrew, who led the team.

"We had to inconspicuously integrate sensing elements and portable power sources into every-

day garments, while maintaining the weight, feel, comfort, function and ruggedness of familiar clothes and fabrics," Andrew said in a statement. Getting enough quality sleep can help protect people against stress, infections and multiple diseases, such as heart and kidney disease, high blood pressure and diabetes, researchers said.

Studies have found that quality sleep also increases mental acuity and sharpens decision-making skills. Yet most people do not get enough sleep – or the right kind, they said.

Although some manufacturers of smart mattresses claim the products can sense movement and infer sleep posture, they do not provide detailed informa-

IMPROVE SLUMBERS

■ The garment called 'Phyjama' could give ordinary people, as well as clinicians, useful information to help improve sleep patterns.



■ Enough quality sleep can help protect people against stress.

■ Key to smart pajamas is reactive vapour deposition.

tion to the sleeper and are not portable for travel.

Commercially available electronic bands worn on the wrist give information about heart rate and monitor how much total sleep the wearer gets.

However, there has not been anything that a typi-

cal consumer could use to monitor posture and respiratory and cardiac signals when slumbering.

The key to the smart pajamas is a process called reactive vapour deposition, researchers said.

"This method allows us to synthesise a polymer

and simultaneously deposit it directly on the fabric in the vapour phase to form various electronic components and, ultimately, integrated sensors," Andrew said.

"Unlike most electronic wearables, the vapour-deposited electronic polymer films are wash-and-wear stable, and they withstand mechanically demanding textile manufacturing routines," she said. The Phyjama has five discrete textile patches with sensors in them. The patches are interconnected using silver-plated nylon threads shielded in cotton. The wires from each patch end up at a button-sized printed circuit board placed at the same location as a pajama button. -PTI

AIIMS app to help doctors diagnose neuro disorders (Hindustan Times: 20190402)

<http://paper.hindustantimes.com/epaper/viewer.aspx>

An app developed by doctors from All India Institute of Medical Sciences (AIIMS) will help primary care physicians in diagnosing four neuro-development disorders in children.



HT FILE While experts said the app cannot replace doctors, it can help ensure a disorder is not undiagnosed or misdiagnosed.

The free PedNeuroAiims Diagnostics app guides doctors through a set of questions and observations to diagnose whether a child has attention deficit hyperactivity disorder (ADHD), neuro-motor impairments (NMI), autism spectrum disorder, or epilepsy.

“There is often a delay in the diagnosis and treatment of neuro-development disorders in children because they are either not screened or get underdiagnosed or misdiagnosed. These tools can aid doctors in timely and appropriate diagnosis,” said Dr Sheffali Gulati, head of child neurology division of the department of paediatrics, AIIMS.

The app, available on the iOS App Store and Android Play Store, asks for information about a child’s name, age and gender before moving to a questionnaire. The answers are scored and a diagnosis is given at the end.

“Some of the questions for all four disorders also ask the doctors to make some observations. And in case the observations differ from what the parents are saying, then the app also tells which one to give weightage to,” Dr Gulati said.

The app can diagnose autism in children between the ages one and 14, with the help of questions on whether the child talks about his/ her achievements and emotions without being asked about it, whether they like to play alone or in a group, or whether they make eye contact while talking.

“Early intervention is essential for autism so that the child can start learning better, can improve at social communication etc. If a child does not respond to sounds by the age of one-year-old or speak a single word by the age of 14 to 16 months, they should be taken to a doctor,” said Dr Gulati. Around 0.9% of all the children between ages 1 and 18 years are estimated to have autism.

The app is based on the latest standard reference used by doctors for diagnosing mental illnesses.

Sensitivity tests tell how accurately a test can identify those with the disease and specificity shows its ability to accurately tell who do not have it.

A study, published in March the journal PLOS One, showed that the tool for diagnosing autism has a sensitivity of 98.4% and specificity of 91.7%.

The diagnostic tool for ADHD , which can be used for children between the ages of 6 and 18 years, has a sensitivity of 87.7% and specificity of 97.2%. The tool asks whether a child follows instructions or has difficulty in doing routine chores among others for diagnosis. Around 1.33% of children are thought to have ADHD.

The AIIMS tool can diagnose epilepsy in children between the 1 month and 18 years, as opposed to existing tools that can diagnose only children between 2 and 9 years.

A study shows that the sensitivity and specificity of the tool is 91.5% and 88.6% respectively.

The sensitivity and specificity of the tool for NMI was shown to be 90.5% and 95.5% and can diagnose anyone between the age of 1 month and 18 years. It asks whether they have difficulty in sitting, standing or walking or have abrupt, jerky movements.

“Apps can never replace the experience and the expertise of a trained doctor, but in a resource-poor setting it is a good tool to guide physicians so that a disorder is not missed. But, diagnosis is just the start, getting to a proper treatment centre is still a challenge for many,” said Dr SK Chandan from neurology department of Safdarjung hospital.

Dengue cases

**6 DENGUE CASES REPORTED IN CITY THIS YEAR, SAYS REPORT
(Hindustan Times: 20190402)**

At least six dengue cases have been reported in Delhi this year, four of which were in March, even though the vectorborne disease is usually reported between July and November, according to a municipal report released Monday.

Last year, 2,798 dengue cases and four deaths were recorded by the South Delhi Municipal Corporation (SDMC), which tabulates data on vector-borne diseases in the city.

According to the report released Monday, a case each was reported in January and February and four in March this year.

Cases of vector-borne diseases are usually reported between July and November, but the period may stretch to mid-December.

While no fresh cases of malaria have been reported, three chikungunya cases have been recorded this year, two in February and one in March.

The dengue victims last year included a minor boy. Three of the victims were identified by as Aman Tiwari (13), Sanskriti (21) and Gagan (23). Doctors have advised people to take precautions to ensure that there was no breeding of larvae around them and urged them to wear fullsleeves and use mosquito nets.

Water coolers should be dried up when not in use as dengue infection-carrying mosquitoes breed there a lot, a doctor said.

Civic bodies had also recently organised a workshop on the prevention of vector-borne diseases.

Mosquito-breeding has been reported from at least 1,676 households and 2,740 legal notices have been issued this year. Of the total number of dengue cases last year, as many as 141 were recorded in December.

Autism

Catching them young: AIIMS doctors develop application to help in timely diagnosis of autism (The Times of India: 20190402)

<https://timesofindia.indiatimes.com/city/delhi/catching-them-young-aiims-docs-develop-app-to-help-in-timely-diagnosis-of-autism/articleshow/68678605.cms>

Doctors at AIIMS have developed a new phone app — PedNeuroAiiimsDiagnostics — that will help in timely diagnosis of Autism Spectrum Disorders (ASD).

The application is available on both GooglePlay or App Store, Dr Sheffali Gulati told TOI, who heads the child neurology division at AIIMS.

She said due to the lack of paediatric neurologists and child psychiatrists in India, there is often a delay in diagnosis of ASD. “With the help of this app, even a paediatrician can assess whether a child has ASD or not. It is based on the latest Diagnostic and Statistical Manual of Mental Disorder (DSM-5),” Dr Gulati said.

ASD are neurodevelopmental disorders that are characterised by deficits of two core domains: impairment in social interaction and communication, and restricted, repetitive behaviour. The AIIMS app, which has been tested successfully on more than 200 children who visited the hospital OPD with suspected ASD, has two sections: Section A and Section B. Section A has 28 questions to assess social interaction or communications skills and restricted, repetitive behaviour and Section B has 9 questions for analysis of questions in Section A, doctors said.

“Out of the 225 children enrolled, 128 children (57%) were diagnosed as ASD based on gold standard assessment,” states the results of the validation of the app published in medical journal PLOS ONE. It adds that diagnostic performance of AIIMS modified tool against gold standard DSM-5 based expert diagnosis revealed sensitivity and specificity of 98% and 92% respectively.

The study was conducted between April 2015 and December 2015 on children aged 1-14 years with suspected ASD. Researchers considered anyone who couldn't babble or point or gesture by 12 months, couldn't say single word by 16 months, couldn't say any two-word spontaneous phrases by 24 months or had loss of language or social skills at any age to have suspected ASD. As per the American Academy of Neurology and Child Neurology Society, such children required further developmental assessment and screening for ASD.

“Our app has features where in patient data can be stored. Also, it is easier to assess a patient on readymade and validated parameters through apps instead of recording them on paper,” Dr Gulati said.

Till about 10 years ago autism was considered a rare disorder. Autism clinics in major hospitals say the occurrence of the neurodevelopment disorder has increased dramatically with more than 3-4 new cases being picked up daily.

It is estimated that close to 10 million people in India suffer from autism and related disorders — for which there is no cure. Behavioural intervention is the mainstay for treatment. “Scientists across world are investigating to look into the reasons for the dramatic increase. Different research have shown the link between genetic factors, pollution, toxins and increased age of the parents (particularly the father of the child) but there is no conclusive evidence to prove it,” say doctors.

Prices of essential medicines

Prices of essential medicines, stents to go up by over 4 %(The Times of India: 20190402)

<https://timesofindia.indiatimes.com/india/prices-of-essential-medicines-stents-to-go-up-by-over-4/articleshow/68679385.cms>

Prices of essential medicines, including painkillers, anti-infectives, supplements and antibiotics, will go up by over 4%, after the government gave its nod to the increase, in line with the annual Wholesale Price Index (WPI). Hike in prices of cardiac stents have also been allowed on the basis of WPI at 4.26% for calendar year 2018. The revision in prices of both stents and medicines will come into effect from April 1.

While prices of 871-odd medicines that are part of the National List of Essential Medicines are expected to go up by over 4%, ceiling prices of drug-eluting stents (DES) have been revised upwards of Rs 30,080, and bare metal stent at Rs 8,261 (exclusive of GST).

Prices of essential medicines are revised according to change in annual WPI, according to the Drug Price Control Order (2013). Earlier, the price for DES (metallic and biodegradable) was Rs 28,849, and bare metal stood at Rs 7,923.

Those manufacturers who sell branded/generic, or both versions of scheduled formulations at a price higher than ceiling price (plus goods and services taxes as applicable), shall revise the prices downward, not exceeding the ceiling price specified (plus goods and services taxes as applicable), the notification says. On the other hand, those companies with scheduled formulations with MRP lower than the ceiling price, can revise it upwards in line with WPI.

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Biopsy

Wearable' device offers alternative to biopsy %(The Times of India: 20190402)

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Nutritious foods

Want to boost your energy this summer? Try these nutritious foods (New Kerala: 20190402)

<https://www.newkerala.com/news/read/121270/want-to-boost-your-energy-this-summer-try-these-nutritious-foods.html>

As the spine-chilling winter has made its way out, it's time to prepare ourselves to combat the scorching heat. If you are experiencing an energy dip in this blistering heat, your body needs a boost and eating the right kind of food could help replenish the much-needed energy.

Shriveling in the intense heat, struggling in the nauseating pollution and not to forget the ceaseless traffic, your body experiences a lot of dehydration and energy drop. It is invariably important to hydrate yourself during this season by drinking ample amount of water. But at the same time, eating the right foods can help you get the much-needed energy kick.

Be it summers or any season, healthy and nutritious foods are always the best alternatives to unhealthy junk food. Here are some tips by Dolly Kumar, Founder, and Director at GAI that can help you lift up your energy levels during summers:

Muesli: Why start your day famished? Opt for a bowl of Muesli with skimmed milk or yogurt, add slices of fresh fruits and enjoy a hearty breakfast along with getting an instant energy kick. Besides helping boost energy, it also aids in weight management. Muesli is rich in fibre and protein and has zero cholesterol, making it good for your heart too. A healthy blend of rolled oats, corn flakes, wheat flakes, and fruit crushes are definitely healthier than other sugary cereals.

Honey: Detoxifying is essential to survive in the baking heat. Why not purify yourself every morning with a glass of lemonade adding a dash of honey? Known as the honey of a thousand flowers, Multifloral Honey is the purest, most distinct and healthiest form of honey available when compared to processed sugar.

A truly remarkable substance, it is a blend of sugar, trace enzymes, minerals, vitamins and amino acids that helps boost immunity, stimulate metabolism and is a good source of energy.

It is also cholesterol-free and sodium-free. Add a dash of Multifloral Honey to your tea, bread, desserts, and mueslis to reload your energy levels!

Trail mix: A handful of nuts, seeds, and dried fruits is an all-time best munching option. Trail Mix comes packed with a combination of almonds, cashew nuts, peanuts, melon seeds, watermelon seeds, green raisin, black raisin, dried papaya fruit, and dried pineapple fruit. Laden with high protein and dietary fibre it gives you an instant energy boost and helps you get going to the gusto.

Spirulina: One of the richest natural sources of protein, Spirulina is a complete food for the body. It contains essential fatty acids along with vitamins, minerals as well as antioxidants. It builds immunity, helps protect eyesight and also fights stress. So pop one or two Spirulina every day and get an energy boost that keeps you going throughout the day.

Granola bar: Who doesn't like munching on bars? Granola Bars are the ultimate energy snack bars. A delicious mix of various healthy ingredients, Granola Bars are packed with a variety of nutrients. These intensely flavoured bars are the perfect pre-workout snack that will energise you to go that extra mile in the gym.

Now, that we have got you all covered with the tips and tricks of boosting your energy levels this summer, enjoy the season like never before!

Disclaimer: The views expressed in the above article are that of the writer and do not reflect that of ANI.

Neurons

New research identifies neurons that drive and quench salt cravings in mouse brain (New Kerala: 20190402)

<https://www.newkerala.com/news/read/121202/new-research-identifies-neurons-that-drive-and-quench-salt-cravings-in-mouse-brain.html>

People who like salty foods take note! New research has identified neurons that drive and quench salt cravings in the mouse brain. The findings are an entry point into regulating sodium cravings in humans.

The paper describing the research appeared online ahead of publication in the journal Nature.

Eating too much salt has potential health risks and can lead to cardiovascular and cognitive disorders. The work was done in the laboratory of Yuki Oka, assistant professor of biology and Chen Scholar.

Sodium, an ion found in table salt, plays a critical role in various body functions, such as cardiovascular activity, fluid balance, and nerve signalling. In every animal species, the body strictly regulates and maintains sodium levels.

Because animals cannot metabolically create sodium themselves, the ions have to be ingested from external food sources. When the body is low on sodium, the brain triggers specific appetite signals that drive the consumption of sodium.

Though the mechanisms of these appetite signals are not fully understood, a team of researchers has now discovered a small population of neurons in the mouse hindbrain that controls the drive to consume sodium.

Led by a graduate student Sangjun Lee, the team used genetic tools to manipulate the activity of these neurons so that they could be stimulated with light.

The researchers observed that artificially stimulating these neurons caused mice to lick a piece of rock salt repeatedly, even when their bodies were completely sated with sodium.

Next, the researchers measured the activity of these neurons while mice ate sodium. Within several seconds of sodium hitting the animal's tongue, the activity of the sodium-appetite neurons was inhibited.

However, a direct infusion of sodium into the stomach of these mice did not suppress the neural activity. This neural suppression also did not occur when sodium receptors on the tongue were pharmacologically blocked.

Taken together, the research shows that oral sodium signals, likely mediated by the taste system, are necessary to inhibit the sodium-appetite neurons.

The desire to eat salt is the body's way of telling you that your body is low on sodium. Once sodium is consumed, it takes some time for the body to fully absorb it, said Oka.

So, it's interesting that just the taste of sodium is sufficient to quiet down the activity of the salt-appetite neurons, which means that sensory systems like taste are much more important in regulating the body's functions than simply conveying external information to the brain, Oka added.

Interestingly, in many species, including humans, consuming sodium can drive the desire to eat even more. In future work, Oka and his collaborators would like to understand how sodium-appetite neurons are modulated over time.

Answering this question may open up avenues to help people with health issues to eat less sodium in their diets.

Keto diet

Ditch the 'cheat day' when on keto diet (New Kerala: 20190402)

<https://www.newkerala.com/news/read/121183/ditch-the-cheat-day-when-on-keto-diet.html>

A new research has revealed that people who are on a keto diet should avoid cheating on their diet.

The research, carried out by the University of British Columbia, Okanagan campus, stated that just one 75-gram dose of glucose- equivalent to a large bottle of soda or a plate of fries- while on high fat, low carbohydrate diet can lead to damaged blood vessels.

The ketogenic or keto diet has become very common for weight loss or to manage diseases like type 2 diabetes, said Jonathan Little, a senior author of the study. It consists of eating foods rich in fats, moderate in protein, but very low in carbohydrates and it causes the body to go into a state called ketosis, he added.

Little said that the diet can be very effective because once the body is in ketosis and starved for its preferred fuel glucose, the body's chemistry changes and it begins to aggressively burn its fat stores. This leads to weight loss and can reverse the symptoms of diseases like Type 2 diabetes.

We were interested in finding out what happens to the body's physiology once a dose of glucose is reintroduced, said Cody Durrer, the study's first author. Since impaired glucose tolerance and spikes in blood sugar levels are known to be associated with an increased risk in cardiovascular disease, it made sense to look at what was happening in the blood vessels after a sugar hit, Durrer added.

For their test, the researchers recruited nine healthy young males and had them consume a 75-gram glucose drink before and after a seven-day high fat, low carbohydrate diet. The diet consisted of 70 per cent fat, 10 per cent carbohydrates and 20 per cent protein, similar to that of a modern ketogenic diet.

We were originally looking for things like an inflammatory response or reduced tolerance to blood glucose. What we found instead were biomarkers in the blood suggesting that vessel walls were being damaged by the sudden spike in glucose, said Durrer.

According to Little, the most likely culprit for the damage is the body's own metabolic response to excess blood sugar, which causes blood vessel cells to shed and possibly die.

Even though these were otherwise healthy young males when we looked at their blood vessel health after consuming the glucose drink, the results looked like they might have come from someone with poor cardiovascular health. It was somewhat alarming, Little added.

The researchers pointed out that with only nine individuals included in the study, more work is needed to verify their findings, but that the results should give those on a keto diet reconsider cheating.

High insulin

High insulin in newborns ups brain damage risk (New Kerala: 20190402)

<https://www.newkerala.com/news/read/121166/high-insulin-in-newborns-ups-brain-damage-risk.html>

Babies born with abnormally high levels of insulin are at the risk of suffering permanent brain damage and life-long disability, finds a study that showed it's possible to predict when and how the condition may affect the child in the long-term.

The generally rare condition, called congenital hyperinsulinism, can also be as common as cystic fibrosis in children born into communities where cousins marry.

So far, scientists understood that there were two main subtypes of the disease known as diffuse -- affects the entire pancreas -- and focal -- affects just one area of the organ.

The new study, led by a team from the University of Manchester in the UK, showed that focal CHI can be further categorised into two types -- spreading focal lesions and isolated focal lesions

Spreading focal lesions are generally larger and spread outwards into areas of healthy cells, while isolated focal lesions, have a capsule around them that keeps the diseased cells separate from healthy cells.

For the study, published in the *Frontiers in Endocrinology* journal, the team investigated the cases of 25 infants with focal CHI to see how the two types of lesions influenced their long-term outcomes.

They found babies with spreading focal lesions suffered more severely from the disease and were diagnosed earlier. These infants were more likely to suffer brain damage, which permanently affected their development, learning and behaviour.

In contrast, in infants with isolated lesions, the disease was diagnosed later and surgery to remove the lesion was less complicated.

These data help to explain why newborn babies diagnosed with the same disease may go on to have very different outcomes and could influence the way clinicians choose to manage each new case of CHI.

"One of the problems facing clinicians is that it's really difficult to predict which babies will have problems after surgical treatment," said Karen Cosgrove, from the varsity.

"Our data gives some important clues that will help clinicians to know how much extra care each baby is likely to need," Cosgrove said.

Cancer

A new wearable device may detect cancer with more precision (Medical News Today: 20190402)

<https://www.medicalnewstoday.com/articles/324855.php>

Researchers from the University of Michigan have developed and are now testing a device they call "the epitome of precision medicine" that detects cancer in circulating blood.

team of researchers working together in the lab

Recent efforts to develop a wearable device that can detect cancer in the bloodstream are showing promise.

"Nobody wants to have a biopsy," says Dr. Daniel Hayes, the Stuart B. Padnos, Professor of Breast Cancer Research at the University of Michigan Rogel Cancer Center in Ann Arbor.

Biopsies are invasive and can be uncomfortable, yet they are currently the most accurate method of determining whether or not a person has cancer.

But, Dr. Hayes suggests, "If we could get enough cancer cells from the blood, we could use them to learn about the tumor biology and direct care for the patients."

Dr. Hayes and his team have recently developed a wearable device that can "filter" circulating blood for cancer cells that — if it passes all the tests — could replace liquid biopsies where healthcare professionals take blood or urine samples from individuals to look for markers of cancer.

Cancer tumors release cells into the blood, which means that, in theory at least, by taking a blood sample and analyzing it, a specialist should be able to detect the presence of cancer.

However, this is easier said than done, since, even in people who have malign tumors, blood samples may not reveal much, or anything at all, as cancer cells their tumors release into the blood circulate quickly, and may not show up in a single blood sample.

Spurred by this complication, Dr. Hayes and his University of Michigan colleagues have come up with a device that can do all the work of liquid biopsy testing but by actually "scanning" the bloodstream for cancer cells.

For the time being, the team has tested this device in dogs and reports the findings in the journal Nature Communications.

Challenges in reaching an effective design

The researchers explain that although most cancer cells that end up in the bloodstream do not survive for long, those that do survive may end up in different parts of the body and form a new, metastatic tumor.

wearable biopsy alternative device developed by tae hyun kim and team

The wearable device is about 2 by 2.75 by 1 inch.

Image credit: Tae Hyun Kim, Ph.D.

For this reason, it is important to detect the presence of cancer as soon as possible and target it with adequate treatment, preventing it from spreading and doing further damage.

When they decided to try and develop a wearable device for the screening of cancer cells in the blood, Dr. Hayes and colleagues faced a series of obstacles that they had to circumvent.

Firstly, the device is about 2 by 2.75 by 1 inch in size, but it must fit all the technology of blood screening and analysis that typically amounts to machines as tall as a desk. Then, they had to find ways of making this wearable device effective and safe.

"The most challenging parts were integrating all of the components into a single device and then ensuring that the blood would not clot, that the cells would not clog up the chip, and that the entire device is completely sterile," explains the study's first author, Tae Hyun Kim, Ph.D.

The team did come up with some creative solutions for all these problems. Firstly, they found a way of mixing the blood running through the device with an anticoagulant (anti-blood clotting agent) — heparin. Then, they came up with a way of making sure that the device remained sterile without affecting the antibodies on the chip that help identify the cancer cells.

As for the chip that lies at the core of this device, the researchers explain that it uses graphene oxide to create a "filtering" mechanisms tipped with antibodies that are able to capture over 80 percent of cancer cells present in the blood.

'The epitome of precision medicine'

To test this device, the researchers worked with healthy dogs that they injected with human cancer cells. The team reassures that this treatment has no long-term effect on the animals whose immune systems get rid of the foreign cells within a few hours of the injection.

In their experiment, the investigators gave the dogs mild sedatives, during the first couple of hours following the cancer cell injections, and they then fitted the screening devices.

Additionally, the team collected blood samples from each animal every 20 minutes, and screened these for cancer cells separately, using chips with the same design as the ones they inserted in the experimental devices.

Cancer: A new 'drug sponge' may reduce chemo's toxic effects

Cancer: A new 'drug sponge' may reduce chemo's toxic effects

An experimental drug "sponge" could help reduce the side effects of chemotherapy.

The researchers found that the wearable device identified and collected 3.5 times more cancer cells per milliliter of blood than the same chip did when "scanning" blood samples in vitro.

"It's the difference between having a security camera that takes a snapshot of a door every five minutes or takes a video. If an intruder enters between the snapshots, you wouldn't know about it," says study co-author Sunitha Nagrath, Ph.D.

In future studies, the researchers aim to perfect the wearable device by increasing its blood-processing rate. To test it further, in a more realistic context, the investigators then plan to use it on dogs that already have cancer.

While the new device has so far shown a lot of promise, Dr. Hayes believes that there is still a while to go until it becomes available to humans. He estimates that the team may be able to conduct clinical trials in human participants within 3 to 5 years.

"This is the epitome of precision medicine, which is so exciting in the field of oncology right now."

Osteoarthritis

How 1 hour of brisk walking can benefit people with osteoarthritis (Medical News Today: 20190402)

<https://www.medicalnewstoday.com/articles/324851.php>

New research examines the benefits of physical activity, such as brisk walking, on mobility and the ability to perform daily tasks among seniors living with knee osteoarthritis.

senior man power walking

One weekly hour of brisk walking may help seniors with osteoarthritis stay healthy, mobile, and physically able well into older age.

Osteoarthritis is the most common form of arthritis among seniors in the United States.

Osteoarthritis of the knee, in particular, affects 10–13 percent of people aged 60 or above, and this percentage rises as high as 40 among people older than 70.

There is currently no cure, and treatment often consists of painkillers or knee surgery, depending on how advanced the disease is.

According to some estimates, for about 2 in 5 people with symptomatic knee osteoarthritis, the condition significantly interferes with their daily lives.

New research, which appears in the American Journal of Preventive Medicine, examines the effects of physical activity on disability induced by knee osteoarthritis.

Dorothy Dunlop, Ph.D., a professor of preventive medicine at the Northwestern University Feinberg School of Medicine, in Chicago, IL, is the lead author of the research.

Walking lowers disability risk by 85 percent

Prof. Dunlop and colleagues analyzed data from over 1,500 adults, whose medical information had been collected as part of the national Osteoarthritis Initiative.

The participants all lived with osteoarthritis and experienced pain, aches, and stiffness in their lower extremities as a result. However, they did not have any disability when they started the study.

The researchers used accelerometers to monitor the participants' physical activity and follow them clinically for a period of 4 years. "Our goal was to see what kind of activity would help people remain free of disability," explains Prof. Dunlop.

Osteoarthritis: New compound may stop the disease

Osteoarthritis: New compound may stop the disease

A new drug may stop the degeneration of cartilage.

The analysis revealed that 1 weekly hour of moderate-to-vigorous physical activity helped the participants maintain standard levels of physical ability.

Participants who got at least this much physical activity had, for instance, no trouble performing daily tasks, such as getting dressed, bathing, walking across the room, or crossing the street swiftly and safely.

More specifically, a weekly hour of exercise lowered the risk of mobility-related disability by 85 percent and that of daily living disability but nearly 45 percent. For the participants, an activity such as brisk walking counted as moderate-to-vigorous exercise.

By the end of the study period, 24 percent of the seniors who did not engage in a weekly hour of exercise walked so slowly that they could not cross the street before the traffic lights changed, and 23 percent said that they had trouble performing their regular morning tasks.

Guidelines may need changing

According to current government guidelines, all seniors should engage in at least 2.5 hours of moderate-intensity physical activity every week to reduce the risk of chronic disease.

But such a level of physical activity may be harder to achieve for people who are inactive due to lower extremity pain, says Prof. Dunlop.

"We hope this new public health finding will motivate an intermediate physical activity goal," she explains. "One hour a week is a stepping stone for people who are currently inactive. People can start to work toward that."

"This is less than 10 minutes a day for people to maintain their independence. It's very doable."

Prof. Dorothy Dunlop, Ph.D.

"This minimum threshold may motivate inactive older adults to begin their path toward a physically active lifestyle with the wide range of health benefits promoted by physical activity."

Antibiotic resistance

Fish slime: An answer to antibiotic resistance? (Medical News Today: 20190402)

<https://www.medicalnewstoday.com/articles/324837.php>

As antibiotic resistance continues to make headlines, researchers are ramping up their search for ways to turn the tide. A recent study focuses on fish slime.

School of fish

A recent study investigates whether the slimy coating of fish could have antibiotic powers.

According to the Centers for Disease Control and Prevention (CDC), antibiotic resistance is "one of the biggest public health challenges of our time."

Each year in the United States, an estimated 2 million people contract an antibiotic-resistant infection.

Of these people, at least 23,000 die. Medical researchers urgently need to address this significant and growing issue.

Scientists are digging into the hidden corners of the planet in the hope of finding new and unusual organisms that might help defeat this foe.

For instance, researchers recently found a new species of bacteria in a soil sample from Northern Ireland in the United Kingdom.

According to Paul Dyson, one of the co-authors of the resulting paper, this bacterium "is effective against four of the top six pathogens that are resistant to antibiotics."

Other scientists have delved into the dark underworld of Canada's cave systems to examine biofilms for their potential use against antibiotic-resistant pathogens.

Researchers from Oregon State University in Corvallis and California State University in Fullerton led the most recent foray into unexplored reservoirs of bacteria, concentrating their attention on the protective slime, or mucus, that coats fish.

The researchers recently presented their findings at the American Chemical Society Spring 2019 National Meeting & Exposition.

Why fish slime?

This gloopy coating is of great use to fish because it traps and destroys pathogens in the environment, such as bacteria, fungi, and viruses. The slime contains novel polysaccharides and peptides, some of which have antibacterial activity.

One of the researchers, Molly Austin, explains that fish mucus is particularly interesting because fish are in constant contact with a complex environment that is dense with potential microbial enemies.

As the authors write, "fish cohabit with a multitude of bacteria and viruses but often resist deadly infections." It is worth finding out whether fish's protective mechanisms might also protect humans.

The marine environment remains relatively unstudied, according to the principal investigator Sandra Loesgen, Ph.D., "For us, any microbe in the marine environment that could provide a new compound is worth exploring."

Erin (Misty) Paig-Tran, Ph.D., who is from California State University, supplied the scientists with fish mucus from both bottom-dwelling and surface-dwelling fish off the coast of California.

The team chose to focus on younger fish because they tend to have thicker mucus layers. The extra mucus is necessary because their immune systems are relatively undeveloped, which means that they need additional protection.

Anti Rabiges (Hindustan: 20190402)

http://epaper.livehindustan.com/imageview_17512_71194032_4_1_02-04-2019_i_5.pagezoomsinwindows.php

एंटी रैबीज इंजेक्शन आपूर्ति के लिए कंपनियां नहीं मिल रहीं

नई दिल्ली | त्रिष्ठ संवाददाता

राजधानी दिल्ली के सरकारी अस्पतालों में एंटी रैबीज इंजेक्शन न होने की वजह से लोगों को परेशानी का सामना करना पड़ रहा है। दिल्ली स्वास्थ्य विभाग भी इंजेक्शन की आपूर्ति न होने से परेशान है। अस्पतालों में इसकी कमी पूरा करने के लिए आपूर्ति करने वाली कंपनियों के लिए जनवरी में स्वास्थ्य विभाग की ओर से टेंडर निकाले गए थे। हालांकि अभी तक किसी भी कंपनी ने इसके लिए आवेदन नहीं किया है।

दिल्ली के स्वास्थ्य महानिदेशक डॉक्टर अशोक कुमार के मुताबिक, पिछले कुछ समय से जो कंपनी इन इंजेक्शनों की आपूर्ति करती थी वह इसे पूरी मात्रा में सप्लाई नहीं कर पा रही थी। इस वजह से जनवरी में नई कंपनियों के लिए टेंडर निकाले थे, ताकि सरकारी अस्पतालों में इंजेक्शन की आपूर्ति करने में सक्षम कंपनियां इसके लिए आवेदन कर सकें। हालांकि, किसी कंपनी ने इसके लिए आवेदन नहीं किया है। अब विभाग ने फिर से टेंडर निकालने का विचार किया है।

Diabetic (Hindustan: 20190402)

http://epaper.livehindustan.com/imageview_17512_71207172_4_1_02-04-2019_i_5.pagezoomsinwindows.php

मधुमेह पीड़िता के शिशु को ऑटिज्म का खतरा

नई दिल्ली | वरिष्ठ संवाददाता

गर्भवती महिला के मधुमेह से पीड़ित होने पर उसके बच्चों में ऑटिज्म स्पेक्ट्रम डिसऑर्डर का खतरा बढ़ जाता है। डॉक्टरों का कहना है कि कई शोधों में यह बात साबित हो चुकी है।

एएसडी मानसिक विकास से संबंधित विकार है, जिसमें व्यक्ति को सामाजिक संवाद स्थापित करने में समस्या आती है और वह आत्मकेंद्रित बन जाता है। अमेरिका के कैलिफोर्निया में हुए शोध के नतीजों में पाया गया कि ऑटिज्म का खतरा मधुमेह रहित महिलाओं के बच्चों की तुलना में उन गर्भवती महिलाओं के बच्चों में ज्यादा होता है, जिनमें 26 सप्ताह के गर्भ के

बिहेवियर थेरेपी बनती है मददगार

प्रोफेसर देवाशीष के मुताबिक ऑटिज्म पीड़ित बच्चों को बिहेवियर थेरेपी से मदद की जा सकती है। ऑटिज्म से प्रभावित बच्चों को मां बाप और समाज के प्यार और सहयोग की जरूरत होती है। कई स्थानों पर ऐसे बच्चों की मदद जानवरों के जरिए की जाती है। दोस्ताना जानवरों के साथ बच्चों को घुलने मिलने दिया जाता है। जानवरों के साथ बच्चे अपनी भावनाओं को बेहतर ढंग से व्यक्त कर पाते हैं।

दौरान मधुमेह की शिकायत पाई जाती है। जीबी पंत अस्पताल में न्यूरो विभाग के प्रोफेसर डॉक्टर देवाशीष चौधरी का कहना है कि कई शोधों में यह बात सामने आई है कि गर्भ के दौरान कुछ दवाओं का इस्तेमाल या पर्याप्त पोषण न मिलने से भी उनके बच्चों में ऑटिज्म का खतरा बढ़ जाता है।

नाम सुनने पर प्रतिक्रिया न दे तो सावधान हो जाएं : प्रोफेसर देवाशीष चौधरी के मुताबिक इस बीमारी से पीड़ित बच्चे अपने आप में ही गुम रहते हैं वे किसी एक ही चीज को लेकर खोए रहते हैं। अगर बच्चा नौ महीने का होने के बावजूद न तो मुस्कराता है तो सावधान होने की जरूरत है।

Antidot Dose (Hindustan: 20190402)

http://epaper.livehindustan.com/imageview_17525_70348018_4_1_02-04-2019_i_18.pagezoomsinwindows.php

एक खुराक से ही नशे की लत छुड़ाएगी नई दवा

वाशिंगटन | एजेसी

युवा वर्ग में बढ़ती नशे की लत को दूर करने के लिए वैज्ञानिकों ने एक नया एंटीडोट बनाया है। इस एंटीडोट का सिर्फ एक बार इस्तेमाल करने से ही नशे के ओवरडोज से छुटकारा पाया जा सकेगा।

अमेरिकन केमिकल सोसाइटी की एक रिपोर्ट के अनुसार सिंथेटिक मादक पदार्थों के ओवरडोज से होने वाली मौतों में बढ़ोतरी हो रही है। फेंटानिल नामक ड्रग का असर काफी समय तक रहता है और इसका थोड़ा-सा भी सेवन करने से

सफलता

- मौजूदा दवा का प्रभाव ज्यादा देर तक नहीं रहता
- नए एंटीडोट का असर 24 घंटे तक रहता है

ओवरडोज हो सकता है। शोधकर्ताओं ने बताया कि इस मादक पदार्थों के दुष्प्रभाव से बचाने के लिए दिया जाने वाला एंटीडोट जैसे नैलोजोन का प्रभाव शरीर पर ज्यादा देर तक नहीं रहता और इसका इंजेक्शन बार-बार देना पड़ता है।