



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20190409

Mental health awareness

Massive rise in mental health awareness in India (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/massive-rise-in-mental-health-awareness-in-india/753253.html>

People in these cities sought help mostly for depression, post-traumatic stress disorder (PTSD), marriage counselling, stress, de-addiction and anger management among others.

While mental health has often remained a widely ignored topic and a taboo in the Indian society, a new report shows over 80 per cent rise in the number of people seeking help for mental health issues, especially in tier-2 cities.

According to domestic digital healthcare platform Practo's annual healthcare map, there has been 82 per cent increase in the appointments with psychologists, psychiatrists and psychotherapists in tier-2 cities—Indore, Kanpur, Nagpur, Jaipur, Vishakapatnam, Bhopal, Chandigarh, Lucknow, Coimbatore, Ahmedabad and Patna.

People in these cities sought help mostly for depression, post-traumatic stress disorder (PTSD), marriage counselling, stress, de-addiction and anger management among others.

"It is a common belief that mental issues are mainly arising in metro cities owing to the stressful lifestyles. However, the non-metro cities are also in immediate need for access to mental healthcare," Aparna Mahesh, psychotherapist at Practo, told IANS.

"The sharp increase in the number of physical appointments with psychologists, psychiatrists and psychotherapists in these towns and cities clearly indicates that Indians beyond metros are seeking timely help to address their concerns rather than ignoring or self-medicating," Mahesh added.

In tier-1 cities—Delhi, Mumbai, Bengaluru, Pune, Chennai, Kolkata and Hyderabad—a 24 per cent increase was seen in the appointments with psychologists, psychiatrists and psychotherapists.

A World Health Organisation (WHO) report states that 7.5 per cent of the Indian population suffers from some form of mental concern or disorder.

"This indicates that unhealthy lifestyle habits, long working hours and work-life imbalance are taking a toll on people and their mental health," the Practo report said.

Further, it was found that Indians visited their doctors 3.2 times a year in 2018, up from 2.7 times in 2017. Gynaecology, dermatology and paediatrics emerged as top three specialties where most visits occurred.

This is, however, lower than Japan where patients visited doctors 13 times or the US where visits to doctors were a little over four times in 2018.

The healthcare map, which highlights key consumer healthcare trends, concerns and behaviour, has been compiled from thousands of searches and appointments, by over 13 crore patients, across more than 50 cities and over 250 specialties, in 2018. — IANS

Alcohol

Harms of alcohol on brain persist even after quitting: Study (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/harms-of-alcohol-on-brain-persist-even-after-quitting-study/753247.html>

Alcohol-induced damage in the brain continues for few weeks after the consumption of alcohol has stopped, according to a study.

Alcohol-induced damage in the brain continues for few weeks after the consumption of alcohol has stopped, according to a study.

Although the harmful effects of alcohol on the brain are widely known, the structural changes observed are very heterogeneous, said researchers from the Central Institute of Mental Health of Mannheim, in Germany.

Diagnostic markers are lacking to characterise brain damage induced by alcohol, especially at the beginning of abstinence, a critical period due to the high rate of relapse that it presents.

Now, researchers have detected, by means of magnetic resonance, how the damage in the brain continues during the first weeks of abstinence, although the consumption of alcohol ceases.

The research, published in the journal JAMA Psychiatry, found that six weeks after stopping drinking there are still changes in the white matter of the brain.

"Until now, nobody could believe that in the absence of alcohol the damage in the brain would progress," said Santiago Canals, of the Institute of Neurosciences in Spain.

Ninety patients with an average age of 46 years hospitalised because of an alcohol use disorder participated in this study.

To compare the brain magnetic resonances of these patients, a control group without alcohol problems was used, consisting of 36 men with an average age of 41 years.

"An important aspect of the work is that the group of patients participating in our research are hospitalised in a detoxification programme, and their consumption of addictive substances is controlled, which guarantees that they are not drinking any alcohol.

"Therefore, the abstinence phase can be followed closely," said Canals.

Another differential characteristic of this study is that it has been carried out in parallel in a rat model with preference for alcohol, which allows to monitor the transition from normal to alcohol dependence in the brain, a process that is not possible to see in humans, said first author Silvia de Santis.

The damages observed during the period of abstinence affect mainly the right hemisphere and the frontal area of the brain and reject the conventional idea that the microstructural alterations begin to revert to normal values immediately after abandoning the consumption of alcohol. — PTI

Poor diet

Hundred of deaths in India caused by poor diet: Lancet study (The Tribune: 20190409)

Hundred of deaths in India caused by poor diet: Lancet study

<https://www.tribuneindia.com/news/health/hundred-of-deaths-in-india-caused-by-poor-diet-lancet-study/753188.html>

Poor diet leads to hundreds of deaths in India annually, according to a Lancet study which found that globally one in five people die due to the lack of optimal amounts of food and nutrients on their plates.

The report, which tracked trends in consumption of 15 dietary factors from 1990 to 2017 in 195 countries, showed that almost every region of the world could benefit from rebalancing their diets.

The study estimates that one in five deaths globally—equivalent to 11 million deaths—are associated with poor diet, and diet contributes to a range of chronic diseases in people around the world.

In 2017, more deaths were caused by diets with too low amounts of foods such as whole grains, fruit, nuts and seeds than by diets with high levels of foods like trans fats, sugary drinks, and high levels of red and processed meats.

Low intake of whole grains—below 125 grammes per day—was the leading dietary risk factor for death and disease in India, the US, Brazil, Pakistan, Nigeria, Russia, Egypt, Germany, Iran, and Turkey.

In Bangladesh, low intake of fruits—below 250 grammes per day—was the leading dietary risk.

In 2017, the countries with the lowest rates of diet-related deaths were Israel, France, Spain, Japan, Andorra and India ranked 118th with 310 deaths per 100,000 people.

The UK ranked 23rd (127 deaths per 100,000) and the US ranked 43rd (171 deaths per 100,000) after Rwanda and Nigeria (41st and 42nd).

China ranked 140th, with 350 deaths per 100,000 people, researchers said in a statement.

The findings highlight the urgent need for coordinated global efforts to improve diet, through collaboration with various sections of the food system and policies that drive balanced diets.

"This study affirms what many have thought for several years— that poor diet is responsible for more deaths than any other risk factor in the world," said Christopher Murray, at University of Washington in the US.

"While sodium, sugar, and fat have been the focus of policy debates over the past two decades, our assessment suggests the leading dietary risk factors are high intake of sodium, or low intake of healthy foods, such as whole grains, fruit, nuts and seeds, and vegetables," said Murray.

The study evaluated the consumption of major foods and nutrients across 195 countries and quantified the impact of poor diets on death and disease from non-communicable diseases (specifically cancers, cardiovascular diseases, and diabetes). It tracked trends between 1990 and 2017.

Overall in 2017, an estimated 11 million deaths were attributable to poor diet. Diets high in sodium, low in whole grains, and low in fruit together accounted for more than half of all diet-related deaths globally in 2017.

The causes of these deaths included 10 million deaths from cardiovascular disease, 913,000 cancer deaths, and almost 339,000 deaths from type 2 diabetes. Deaths related to diet have increased from 8 million in 1990, largely due to increases in the population and populat

Water

73% water samples fail test in Faridabad (The Tribune: 20190409)

<https://www.tribuneindia.com/news/haryana/73-water-samples-fail-test-in-faridabad/755408.html>

Water supplied from MCF tubewells is safe as its source is underground water and not the surface water that requires chlorination. The samples were not taken in the presence of MCF officials. — DR Bhaskar, chief engineer, MCF

As many as 73 per cent samples of drinking water supplied by the Municipal Corporation Faridabad (MCF) have failed in tests conducted by the Health Department.

As many as 73 per cent samples of drinking water supplied by the Municipal Corporation Faridabad (MCF) have failed in tests conducted by the Health Department in the past three months.

While the district health officials describe chlorination as mandatory to check the growth of bacteria and viruses, the civic body officials claim that the water supplied by it without proper chlorination was also fit for consumption.

The Health Department collected samples from 988 tubewells and booster pumps between January 1 and April 5 to check if those were properly chlorinated. According to the results, officials did not find any chlorination in 727 samples out of the total of 990. “Only 263 samples exhibited the presence of chlorine in the water,” said Dr Ram Bhagat, Deputy CMO and in-charge of the test cell.

The city has a total of 1,477 tubewells and booster pumps. He said chlorinators installed by the MCF at the majority of tubewells and pumps were either dysfunctional or had no chlorine when the samples were collected. The collected samples are put through an ‘Orthotolidine Test’ in which the level of free and combined chlorine residuals are determined.

He said chlorination of the piped water supply was important as it checks the presence or growth of certain bacteria and viruses that could make the water unsafe for drinking. The

consumption of untreated water could result in health disorders like cholera, typhoid and dysentery, especially in children whose immunity is weak.

But contesting the claims of the Health Department, DR Bhaskar, Chief Engineer, MCF, said the water supplied from MCF tubewells was safe as its source was underground water and not the surface water, which requires chlorination.

Admitting that chlorinators at many pumps might be non-functional or might not have the desired amount of chlorine at times, he said the samples had not been taken in the presence of MCF officials.

Be as cool as cucumber (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/be-as-cool-as-cucumber/753781.html>

The hazardous impact of heat can be minimised if foods that have cooling properties are included in our daily diet during summer

The summer season can be tiring due to extreme hot conditions and demands special care in terms of food intake. Scorching heat increases the level of dehydration and reduces the energy of the body. Hence, it is important to take care of health in the summer season. The season of extreme temperatures puts our body at high risk, if we don't follow a diet that is nutritious and cooling.

The hazardous impacts of summer can be minimised if foods having cooling properties are included in our daily diet. Here are some foods that can be eaten everyday to beat the heat:

Coconut and coconut water

To keep the body cool and hydrated, coconut water is the best drink to have in summer. Coconut is rich in many vitamins, minerals, carbohydrates, fibre, protein, vitamin C, magnesium, manganese, potassium, sodium, calcium, etc.

Watermelon

A common summer fruit, watermelon is not only delicious to eat, but is also very nutritious for the body. This fruit is the largest source of vitamin A, C and B6. Watermelon contains 92 per cent water and 8 per cent sugar. If for some reason, water is not immediately available, having watermelon can lower the risk of dehydration. The juicy fruit is also rich in antioxidants and a large number of nutrients. It contains thiamine, riboflavin, niacin, folate, pantothenic acid, magnesium, phosphorus, sodium potassium, zinc, copper, manganese, selenium, choline, lycopene, and betaine. Watermelon contains more lycopene than any other fruit or vegetable. In short, it is a beneficial food to keep body the cool.

Cucumber

Cucumbers are considered a boon for summer. When the mercury shoots up, nutrient-rich cucumbers should be included in your daily diet. Cucumbers contain 95 per cent water, which keeps your body cool and fresh during the hot weather. Cucumbers also contain several antioxidants, including vitamin C, beta-carotene and manganese. Low in calories, carbohydrates, sodium, fat and cholesterol, their consumption can help prevent many serious diseases like cancer, as these contain two phytonutrient compounds associated with anti-cancer benefits: lignans and cucurbitacins.

Mint

Mineral-rich mint is a good source of vitamin C. There are many variations of mint, of which peppermint and spearmint are most used. Drinking mint juice or adding it in mango juice or sugarcane juice and curd can lower the risk of heat in the body. Mint leaves contain an antioxidant and anti-inflammatory agent called rosmarinic acid. Some studies found it effective in relieving seasonal allergy symptoms.

Onions

The peeled onion, eaten as a salad with food, is beneficial in summer. By eating onions daily and keeping a small onion with you when going out can save you from the heat stroke. Adding onion to your diet also helps in protecting you against the sun-stroke.

Curd

Curd or yogurt is an ideal summer food as it has many nutritious ingredients like calcium, protein, vitamins, etc. Compared to milk, yogurt is much more beneficial for health. Even people with lactose intolerance can eat curd. Phosphorus and vitamin D obtained from curd are beneficial for the body. It also contains more calcium than milk. In addition, proteins like casein and whey, lactose, iron, vitamin B12 and riboflavin is found in yogurt. Rich in probiotics, curd is good for gut health and digestion problems.

Melons

Melon is a water-rich fruit that keeps the body hydrated. Melon seeds contain a substantial amount of protein. Melons are low in calories, fat, cholesterol and do not contain much sugar. Vitamin A, C and E are found in melons more than other fruits. They are a good source of potassium, and contain good amounts of sodium and magnesium and calcium.

Lemon or lime water

Having glass of lemon or lime water in summer may provide you many health benefits. Along with vitamin C, lemons and limes are also a rich source of potassium, calcium, phosphorus, magnesium, etc. Lemon water is good for detoxification as well.

Celery

Along with calcium, sodium, copper, iron, zinc, magnesium and potassium are also included in abundance in celery. Celery contains vitamin A, K, C, E, D, and B, including thiamin, riboflavin, folic acid, vitamin B6 and vitamin B12. It is a good source of fibre as well. Celery contains 95 per cent water which makes it beneficial for summer.

Green leafy vegetables

Green vegetables are packed with vitamins, minerals and fibre but low in calorie. These strengthen the body's resistance and are good for general health. Most green veggies are good source of vitamin C and K and minerals like iron and many antioxidants. Spinach, mint, fenugreek, etc. are some common green vegetables.

— The writer is director and consultant, internal medicine, BLK Super Specialty Hospital, New Delhi

Fasting the right way (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/fasting-the-right-way/753785.html>

From ancient ayurveda to latest medical research, fasting is good for health

As the nine-day-long Navratras begin today, many people will be fasting for these days. The very word conjures up all kind of notions. But going by the usual practices we see around, most of these are practised the wrong way, taking away much of the benefits that fasting can actually provide.

Fasting dates back to centuries and is central to many cultures and religions. However, in recent years it has gained popularity across the world for reasons based on health rather than religion. From ancient ayurveda to latest medical research, fasting is good for health. Many medical studies have shown various health benefits of fasting. It promotes blood sugar control, improves blood pressure, triglycerides and cholesterol levels, fights inflammation, boosts brain function and prevents neurodegenerative disorders. It can aid weight loss and boost metabolism.

Usually, when the season changes, our immunity is at the lowest. It makes sense, then, to give rest to the digestive system and eat light. As the foods we eat during Navratras do not include wheat, oats, etc., the consumption of gluten-free foods can boost the energy levels.

Fasting, if done right, can detoxify the body, say Dr Nilu Malhotra, a Chandigarh-based dietician. Most of the people fast during the day or just consume, milk, fruits, curd etc. After

fasting for whole day, most of them splurge on fried foods like kuttu pooris or sabudana tikis in the evening. This leads to acidity in many persons.

Choose it right

Fasting can be hard but it doesn't have to be. One has to just make the right kind of choices. Also most people only think of eating potatoes and kuttu or singhara flour during Navratras fasts. However, there is a vast variety of foods you can eat during these nine days. You can only be limited by your imagination.

Sabudana, samak rice, sweet potato, pumpkin, most fruits, root vegetables, paneer, curd, lassi — the list is exhaustive. Begin your day with warm water and some dry fruits, including almonds and walnuts.

Food fest

For breakfast, have a banana shake or sabudana khichdi or peanut salad with lots of vegetables and raisins.

Make lunch your main meal of the day. Have kuttu or singhara rotis with curd or potato curry or steamed pumpkin vegetable. You can have a pulao of samak rice with lot of vegetables. Or you can have steamed samak rice with curd that has been tempered with curry leaves.

Dinner should always be light. As fasting can make us lethargic, many people do not indulge in much physical activity. In such circumstances, a heavy evening meal can cause acidity and also negate the benefits of fasting.

Opt for grilled paneer, or cold cucumber soup or some milk and fruits for a good night's sleep. Opt for small meals every three hours, advises Dr Malhotra. And have at least two litres of water or other liquids like coconut water, lemon water, chhachh, etc., to avoid dehydration. Eating wisely during these nine days can make fasting an enjoyable experience.

Quick bites

Opt for the right kind of foods and liquids.

Instead of having fried kuttu pooris, opt for stuffed kuttu or singhara atta rotis with cucumber raita.

Eating whole fruits is better than having juices, as the fibre in fruit will keep you feeling full for a longer period.

Those who exercise, need not give up their workout. They can eat a banana or a bowl of sweet potatoes an hour before working out.

Sugar rush'

'Sugar rush' may be a myth (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/-sugar-rush-may-be-a-myth/755174.html>

The researchers found that sugar consumption has virtually no effect on mood. iStock

The idea of 'sugar rush'—a state of hyperactivity after consuming too many sweets—is a myth, claim scientists who found that sugar makes people less alert and more tired.

Researchers from University of Warwick and Lancaster University in the UK set out to examine whether sugar really boost people's mood.

Using data collected from 31 published studies involving almost 1,300 adults, the team investigated the effect of sugar on various aspects of mood, including anger, alertness, depression, and fatigue.

They also considered how factors such as the quantity and type of sugar consumed might affect mood, and whether engaging in demanding mental and physical activities made any difference.

The researchers found that sugar consumption has virtually no effect on mood, regardless of how much sugar is consumed or whether people engage in demanding activities after taking it.

They found that people who consumed sugar felt more tired and less alerted than those who had not.

The study shows that the idea of a 'sugar rush' is a myth without any truth behind it.

"We hope that our findings will go a long way to dispel the myth of the 'sugar rush' and inform public health policies to decrease sugar consumption," said Elizabeth Maylor, from the University of Warwick.

"The idea that sugar can improve mood has been widely influential in popular culture, so much so that people all over the world consume sugary drinks to become more alert or combat fatigue," said Konstantinos Mantantzis, from Humboldt University of Berlin, who led the study.

"Our findings very clearly indicate that such claims are not substantiated—if anything, sugar will probably make you feel worse," said Mantantzis. PTI

Hormone

Hormone that protects women from liver cancer (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/hormone-that-protects-women-from-liver-cancer/753700.html>

Researchers have discovered that a hormone—present at higher levels in women—can keep them away from liver cancer, suggesting the disease is more common in men.

The study showed that a potential contributor to this gender disparity is adiponectin, a hormone secreted by fat cells that helps control the body's metabolism.

The hormone activates two proteins inside liver cells, known as p38 and AMPK that block cell proliferation and impair tumour growth, said the study, published in the Journal of Experimental Medicine.

"Circulating adiponectin levels have been reported to be higher in women than in men," said Guadalupe Sabio at the Spanish National Center for Cardiovascular Research (CNIC) in Spain.

Similar to humans, male mice are more also prone to hepatocellular carcinoma (HCC)—the most common form of liver cancer—than females, as the increased levels of adiponectin in female mice protect them from HCC, the study said.

Inhibiting testosterone production in male rodents increased their adiponectin levels and reduced tumour growth.

Importantly, the study suggested that adiponectin and metformin—a common antidiabetic drug—could be used as novel treatments for liver cancer.

Sabio said that adiponectin's role in HCC is controversial and needed further investigation.

Liver cancer is the fourth leading cause of cancer-related deaths worldwide. — IANS

Just 20-minute 'nature pill'

Just 20-minute 'nature pill' can lower your stress (The Tribune: 20190409)

<https://www.tribuneindia.com/news/health/just-20-minute-nature-pill-can-lower-your-stress/753198.html>

Screen time before bedtime may not harm teenagers

Stop smoking cigarettes before they make you blind

Just 20-minute 'nature pill' can lower your stress

Healthcare practitioners can use this finding to prescribe "nature pills" to have a real measurable effect, according to researchers from the University of Michigan.

Taking just 20 minutes out of your day to stroll or sit near nature will significantly lower your stress hormone levels, a new study suggests.

Healthcare practitioners can use this finding to prescribe 'nature pills' to have a real measurable effect, according to researchers from the University of Michigan.

"We know that spending time in nature reduces stress, but until now it was unclear how much is enough, how often to do it, or even what kind of nature experience will benefit us," said lead author MaryCarol Hunter from the varsity.

For the study, published in the journal *Frontiers in Psychology*, the research team involved 36 participants. Over an eight-week period, they were asked to take a 'nature pill' for at least 10 minutes, three times a week.

Levels of cortisol—a stress hormone—were measured from saliva samples taken before and after taking the 'nature pill', once every two weeks.

The data revealed that just a 20 minute nature experience was enough to significantly reduce cortisol levels.

And if you take in a little more nature experience - 20 to 30 minutes sitting or walking - cortisol levels dropped at their greatest rate, the researchers said.

"Our study shows that for the greatest payoff, in terms of efficiently lowering levels of the stress hormone cortisol, you should spend 20 to 30 minutes sitting or walking in a place that provides you with a sense of nature," Hunter noted.

Chill Powder

Chilli peppers may help slow down spread of cancer cells (The Times of India: 20190409)

http://timesofindia.indiatimes.com/articleshow/68788323.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

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Food additive

Food additive in frozen meat, crackers worsens flu (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124654/food-additive-in-frozen-meat-crackers-worsens-flu.html>

Food additive in frozen meat, crackers worsens flu

A common food additive found in many products, including frozen meat, crackers and fried foods, could weaken the human immune system against flu, which accounts for 290,000-650,000 deaths globally every year, say researchers.

Besides increasing the severity of flu symptoms, the study found exposure to the compound -- tert-butylhydroquinone (tBHQ) -- could reduce effectiveness of flu vaccine through its effects on T cells, a vital component of the immune system.

During the study, mice fed tBHQ-spiked diet were slower to activate both helper T cells and killer T cells, causing slower clearance of the virus.

"Our studies showed mice on a tBHQ diet had a weakened immune response to influenza (flu) infection," said Robert Freeborn, postdoctoral candidate at the Michigan State University.

"In our mouse model, tBHQ suppressed function of helper and killer T cells. It led to more severe symptoms during a subsequent influenza infection," Freeborn said.

When the mice were re-infected with a different but related strain of influenza, those on the tBHQ diet had a longer illness and lost more weight. This suggests that tBHQ impaired the "memory response" that typically primes the immune system to fight a second infection, Freeborn said.

tBHQ is an additive used to prevent spoilage, with a maximum allowed concentration of 200 parts per million in food products.

Since tBHQ is not always listed on ingredient labels, the best way to limit tBHQ exposure is to be conscious about food choices. A low-fat diet and less consumption of processed snacks will help reduce tBHQ consumption, he suggested.

Annual flu shot significantly reduces the length and severity of the illness and prevents influenza infection.

The study will be presented at the American Society for Pharmacology and Experimental Therapeutics annual meeting in Orlando.

Vitamin D

Vitamin D excess may lead to kidney failure (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124594/vitamin-d-excess-may-lead-to-kidney-failure.html>

In a rare case, a 54-year-old man, after returning from a trip to Southeast Asia where he spent much of his holiday sunbathing, was diagnosed with kidney damage after he took high doses of vitamin D for years.

After referral to a kidney specialist and further testing, it was discovered that the man had been prescribed high doses of vitamin D by a naturopath, who recommended a dose of 8 drops every day, according to a study published in the Canadian Medical Association Journal.

Over two-and-a-half-years, the patient, who did not have a history of bone loss or vitamin D deficiency, took 8-12 drops of vitamin D daily, totalling 8,000-12,000 IU.

As a result, he had very high levels of calcium in the blood which left him with significant kidney damage.

The recommended daily allowance of vitamin D is 400-1000 IU, with 800-2000 IU recommended for adults at high-risk of osteoporosis and for older adults.

"Although vitamin D toxicity is rare owing to a large therapeutic range, its widespread availability in various over-the-counter formulations may pose a substantial risk to uninformed patients," said Bourne Auguste from the University of Toronto.

Clinicians must be aware of the risks of vitamin D use to limit complications related to hypercalcemia.

Calcium levels may get worse before getting better in patients even after cessation of supplements, as vitamin D is fat soluble.

"Our experience informs us that patients and clinicians should be better informed about the risks regarding the unfettered use of vitamin D," suggested the researchers.

Observing cells'

Observing cells' eating habits may aid cancer diagnosis, finds study (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124524/observing-cells-eating-habits-may-aid-cancer-diagnosis-finds-study.html>

: A recent research has found that if we observe what cells eat, then it may be possible to diagnose and treat diseases such as cancer.

In the study published in the journal *Angewandte Chemie*, scientists have developed a new imaging technology to visualise what cells eat.

The team has designed chemical probes that light up when they attach to specific molecules that cells eat, such as glucose.

Researchers used microscopes to watch cells eating glucose inside live zebrafish embryos, which are transparent and easy to observe. They found the technique also worked with human cells growing in the lab.

The team said their approach could easily be adapted to look at other molecules that are important for health and disease.

All cells rely on glucose and other molecules for their survival. If a cell's eating habits change, it can be a warning sign of disease.

Researchers said that the new technology could help detect tiny changes in cells' eating habits inside the body's tissues, making it easier to spot diseases sooner.

Doctors could also use the technology to monitor how patients are responding to treatment, by tracking the molecules that are eaten by healthy and diseased cells.

"We have very few methods to measure what cells eat to produce energy, which is what we know as cell metabolism. Our technology allows us to detect multiple metabolites simultaneously and in live cells, by simply using microscopes," Dr Marc Vendrell, said.

"This is a very important advance to understand the metabolism of diseased cells and we hope it will help develop better therapies," he added.

Exercise

Exercise during pregnancy guards offspring against obesity, says study (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124506/exercise-during-pregnancy-guards-offspring-against-obesity-says-study.html>

A recent study conducted in mice found that offspring born to mice that exercised were less likely to become obese after consuming a high-fat diet later in life.

The new findings were presented at the 2019 Experimental Biology meeting.

Although previous studies have shown that exercise by obese females benefits their offspring, this is the first research to demonstrate that the same is true when non-obese females exercise.

"Based on our findings, we recommend that women, whether or not they are obese or have diabetes, exercise regularly during pregnancy because it benefits their children's metabolic health," said Jun Seok Son, who conducted the study.

The researchers examined the offspring of mice that performed 60 minutes of moderate intensity exercise every morning during pregnancy. Offspring born to mice that didn't exercise were used as a control group.

At weaning, the offspring of the exercising mice showed increased levels of proteins associated with brown adipose tissue compared to the control group. This type of tissue converts fat and sugar into heat.

The researchers also observed higher body temperatures in the exercise group, indicating that their brown adipose tissue was more efficient or had a higher thermogenic function which has been shown to prevent obesity and metabolic problems.

After weaning, the offspring followed a high-fat diet for eight weeks. The mice in the exercise group not only gained less weight on the high-fat diet but also showed fewer symptoms of metabolic diseases such as diabetes and fatty liver disease.

"Our data suggest that the lack of exercise in healthy women during pregnancy can predispose their children to obesity and associated metabolic diseases partially through impairing thermogenic function," said Son.

Vaccine allergies

Five things to know about vaccine allergies (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124480/five-things-to-know-about-vaccine-allergies.html>

Only one in 760,000 vaccinations will respond with anaphylaxis and for all other side effects, there are ways around any problem, a new study shows.

Five facts about allergies to vaccines, pulled together by two McMaster University physicians, were published in the Canadian Medical Association Journal (CMAJ), are:

Immunoglobulin E (IgE)-mediated allergies to vaccines are extremely uncommon: Responding to a vaccine with hives, swelling, wheezing or anaphylaxis happens in about one of 760,000 vaccinations. It will start within minutes of the vaccination, is unlikely to begin after 60 minutes and highly unlikely to occur after four hours.

Signs like fever, local pain or local swelling are not signs of allergy: These responses to a vaccine may happen as much as seven to 21 days after a vaccination, but they are not an allergic reaction.

With the exception of the yellow fever vaccine, an egg allergy is no reason to avoid vaccinations: No special precaution is needed when people who have an egg allergy have influenza, MMR (mumps, measles and rubella vaccines given together), or rabies vaccination because the amount of egg protein it may contain is too minuscule, says the Public Health Agency of Canada and the Canadian Pediatric Society.

It may be a reaction to the rubber stopper: If you have a latex allergy, it will be the rubber stopper or preloaded syringe, not the vaccine that causes a problem.

Your allergist can safely vaccinate you: If you really do have a vaccine allergy, allergists can help immunize you through techniques such as graded administration or giving the vaccine a little at a time.

Blood vessel health

Sunscreen use could lead to better blood vessel health, study suggests (New Kerala: 20190409)

<https://www.newkerala.com/news/read/124363/sunscreen-use-could-lead-to-better-blood-vessel-health-study-suggests.html>

Sunscreen protects the skin's blood vessel function from harmful ultraviolet radiation (UVR) exposure by protecting dilation of the blood vessels. Perspiration on the skin may also provide protection to the skin's blood vessels from sun damage, a recent study has suggested.

UVR from the sun has been well-documented as a contributing factor to skin cancer and premature skin aging. UVR has also been found to reduce nitric oxide-associated dilation of skin blood vessels (vasodilation) by reducing the amount of nitric oxide available in the skin. Nitric oxide is a compound essential for blood vessel health. Vasodilation of the skin's blood vessels plays an important role in regulating body temperature and responding to heat stress, both locally in the skin and throughout the body.

The findings were discussed in the Experimental Biology 2019 meeting.

Researchers from Pennsylvania State University studied the effect of UVR exposure with sunscreen or sweat on nitric oxide's ability to promote vasodilation of skin blood vessels. Healthy young adults with light-to-medium skin tone were exposed to UVR on one arm while the other arm served as a control and did not receive UVR treatment. The dosage of UVR was roughly equivalent of spending an hour outside on a sunny day, but without the reddening of sunburn. Three sites on the UVR-exposed arm of each participant were randomly assigned one of three treatments:

- * One site received UVR only,
- * A second site received UVR with a chemical sunscreen on the skin, and
- * A third site received UVR with simulated sweat on the skin.

The UVR-only site was found to have less nitric oxide-associated vasodilation than in the control arm. However, the sunscreen- and sweat-treated sites did not show these reductions in nitric oxide-associated vasodilation.

"Further, when sunscreen was applied prior to UVR, UVR exposure actually augmented [nitric oxide-associated vasodilation] compared to [the control arm], or when sweat was on the skin.

The presence of sunscreen or sweat on the skin may play a protective role against this effect [of UVR]," the research team wrote.

"For those who spend a lot of time working, exercising or participating in other various activities outdoors, using sunscreen may protect not only against skin cancer but also against reductions in skin vascular function," wrote S. Tony Wolf, MA, first author of the study.