



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
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Chemotherapy

Over 1.5 crore people will need chemotherapy globally each year by 2040: Study (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/over-1-5-crore-people-will-need-chemotherapy-globally-each-year-by-2040-study/772414.html>

Over 1.5 crore people will need chemotherapy globally each year by 2040: Study

Over 1.5 crore people will need chemotherapy globally each year by 2040, a new study has said, suggesting that around one lakh cancer physicians will be required to treat the growing number of cancer patients mostly in low and middle-income countries.

The study published recently in the prestigious the Lancet Oncology journal has predicted that from 2018 to 2040, the number of patients needing chemotherapy each year will rise by a 53 per cent from 9.8 million to 15 million (1.5 crore) globally.

It is the first study to estimate the scale of chemotherapy provision needed at national, regional and global scales to respond to this situation.

The study was conducted by researchers at University of New South Wales in Sydney, Ingham Institute for Applied Medical Research, Kinghorn Cancer Centre, Liverpool Cancer Therapy Centre in Australia and International Agency for Research on Cancer, Lyon.

According to researcher Brooke Wilson of UNSW, the rising global cancer burden was undoubtedly one of the major health crises of today.

"Strategies are urgently needed to equip the global health workforce to enable safe treatment of current and future patients," she said, adding "countries and institutions should use our data to estimate their future cancer physician workforce requirements and chemotherapy needs and

plan national, regional, and global strategies to ensure all those who need it will have access to chemotherapy treatment.”

The landmark study also looked at how many cancer physicians will be needed now and in 2040, and also explored where the patients needing chemotherapy will reside now and then.

"We needed 65,000 cancer physicians in 2018 to provide chemotherapy to all patients who would benefit from it – but that number will rise to an optimal 100,000 in 2040," Wilson said.

"By 2040, over 10 million of the 15 million of patients requiring chemotherapy will live in low- or middle-income countries. Of the additional 5.2 million people needing treatment by 2040, an estimated 75 per cent will live in these countries.”

Study co-author Michael Barton of UNSW Medicine said existing evidence showed that the global number of cancer cases is expected to rise, particularly in low- and middle-income countries.

“As a crucial component of cancer care, chemotherapy is likely to benefit a large proportion of these cases," he said.

“Population growth and changes in distributions of cancer types by country were the leading factors driving the increased chemotherapy demand we saw in our study.”

The authors used best-practice guidelines, patient characteristics and cancer stage data from the USA and Australia to calculate the proportion of newly diagnosed cases of cancer who would benefit from chemotherapy.

They applied these rates to international estimates of global incidences of adult and paediatric cancer from 2018 up to 2040 (GLOBOCAN) to provide estimates of global chemotherapy demand.

The findings are of particular concern for regions expected to have the greatest increases in new cases requiring chemotherapy - doubling or more in eastern Africa, middle Africa, western Africa and western Asia.

In 2040, the most common cancers needing chemotherapy will be lung, breast and colorectal cancer and the greatest absolute increases in new cases will occur for these same three types of cancer. — PTI

Brain cancer

Achilles' heel of aggressive brain cancer found (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/achilles-heel-of-aggressive-brain-cancer-found/772409.html>

Inhibiting the function of a gene may lead to the death of the most prevalent and lethal type of brain tumour in adults, according to a study.

With no curative treatment currently available, glioblastomas cannot be surgically completely excised, as the tumour cells are adept at invading tissues and spreading around the brain.

In addition, glioblastoma cells are extremely resistant to existing drug therapies, said researchers from the University of Helsinki in Finland.

For a long time, researchers have been looking for weaknesses in glioblastoma cells which could be targeted with efficacious therapies.

They have already earlier found that the expression of a small fatty acid-binding protein (MDGI, or FABP3) in glioblastoma cells increases their ability to invade tissues and is linked with a poorer prognosis for the patient.

"Our new research revealed that glioblastoma cells depend on the expression of a gene which produces the MDGI protein," said Professor Pirjo Laakkonen from the University of Helsinki.

"Inhibiting the function of this gene results in the death of the tumour cells," Laakkonen said.

The absence of MDGI caused instability in the membranes of lysosomes, cleaning organelles found inside tumour cells, which, in turn, resulted in the leakage of acidic and proteolytic enzymes contained in the lysosomes into the cytoplasm, initiating cell death.

Further investigations of the mechanism leading to cell death revealed that silencing MDGI caused changes in the phospholipid composition of the lysosomes in glioblastoma cells.

The transport of linoleic acid, a substance essential to humans found in food, from outside to inside cells was disturbed, resulting in a significant change to the fatty acid composition of the lysosomal membrane.

This change apparently increased the permeability of the membrane, according to the study published in the EMBO Molecular Medicine journal.

"Our research demonstrates that MDGI is a key factor regulating and maintaining the structure of the lysosomal membrane. This is the first gene found to regulate the stability of the membrane," Laakkonen said.

What makes this finding particularly interesting is that cell death caused by leakage in the lysosomes of glioblastoma cells can be activated by using drugs that cross the blood-brain barrier.

In their studies, Laakkonen's group used an antihistamine known as clemastine.

In cell cultures, clemastine resulted in lysosome-mediated death in glioblastoma cells already at concentrations which had no significant effect on healthy cells of different types.

In mouse models, clemastine was very effective in reducing the spread of brain tumours and improving the survival rate of the animals, researchers said.

In the case of the most invasive brain tumour model, the administration of clemastine resulted in the disappearance of the entire tumour, they said.

"Our findings demonstrate that antihistamines and other drugs that increase the permeability of the lysosomal membrane can be considered as an enhancing therapy for patients with glioblastoma alongside established treatments," Laakkonen said. — PTI

Coffee

Scientists decode: How much coffee is too much? (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/scientists-decode-how-much-coffee-is-too-much/772390.html>

A morning coffee is essential for many people looking to kick-start their day. — Thinkstock

Drinking six or more cups of coffee a day can be harmful to your health, increasing the risk of heart disease by up to 22 per cent, a study claims.

A morning coffee is essential for many people looking to kick-start their day.

While the humble coffee may be a vital feature of the daily grind, researchers from the University of South Australia wondered how much caffeine is too much.

They investigated the association of long-term coffee consumption and cardiovascular disease, finding the point at which excess caffeine can cause high blood pressure, a precursor to heart disease.

According to the World Health Organization (WHO), cardiovascular disease is the leading cause of death, yet one of the most preventable.

This is the first time an upper limit has been placed on safe coffee consumption and cardiovascular health, according to the study published in *The American Journal of Clinical Nutrition*.

"Coffee is the most commonly consumed stimulant in the world—it wakes us up, boosts our energy and helps us focus—but people are always asking 'How much caffeine is too much?'," said Elina Hypponen, a professor at the University of South Australia.

"Most people would agree that if you drink a lot of coffee, you might feel jittery, irritable or perhaps even nauseas—that's because caffeine helps your body work faster and harder, but it is also likely to suggest that you may have reached your limit for the time being," Hypponen said.

"We also know that risk of cardiovascular disease increases with high blood pressure, a known consequence of excess caffeine consumption," she said.

In order to maintain a healthy heart and a healthy blood pressure, people must limit their coffees to fewer than six cups a day, researchers said.

Based on the data, six was the tipping point where caffeine started to negatively affect cardiovascular risk, they said.

Using UK Biobank data of 347,077 participants aged 37-73 years, the study explored the ability of the caffeine-metabolising gene (CYP1A2) to better process caffeine.

The researchers identified increased risks of cardiovascular disease in line with coffee consumption and genetic variations.

Hypponen said that despite carriers of the fast-processing gene variation being four times quicker at metabolising caffeine, the research does not support the belief that these people could safely consume more caffeine, more frequently, without detrimental health effects.

"An estimated three billion cups of coffee are enjoyed every day around the world," Hypponen said.

"Knowing the limits of what's good for you and what's not is imperative," she said. — PTI

Meditation

Meditation not pleasant for everyone: Study (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/meditation-not-pleasant-for-everyone-study/771948.html>

Meditation—which is widely believed to be an antidote to mental health issues—may not always be a pleasant experience for everyone, according to scientists who advocate more research into such practices.

The research, led by scientists from University College London (UCL) in the UK, found that over a quarter of people who regularly meditate have had a 'particularly unpleasant' psychological experience related to the practice, including feelings of fear and distorted emotions.

Published in the journal PLOS ONE, the study also found those who had attended a meditation retreat, those who only practiced deconstructive types of meditation, such as Vipassana (insight) and Koan practice (used in Zen Buddhism), and those with higher levels of repetitive negative thinking, were more likely to report a 'particularly unpleasant' meditation-related experience.

However, the study, which comprised an international online survey of 1,232 people who had at least two months' meditation experience, found female participants and those with a religious belief were less likely to have had a negative experience.

"These findings point to the importance of widening the public and scientific understanding of meditation beyond that of a health-promoting technique," said Marco Schlosser, a researcher at UCL.

"Very little is known about why, when, and how such meditation-related difficulties can occur: more research is now needed to understand the nature of these experiences," Schlosser said in a statement.

"When are unpleasant experiences important elements of meditative development, and when they are merely negative effects to be avoided?" he said.

The study, conducted with researchers at Witten/Herdecke University in Germany, and the University of Ljubljana in Slovenia, was triggered by a limited but growing number of research reports and case studies, which indicate psychologically unpleasant experiences can occur during meditative practice.

Some traditional Buddhist texts also reference vivid accounts of similar experiences. However, very little is known about the prevalence of these experiences.

Of the 1,232 participants, 25.6 per cent indicated that they had previously encountered particularly unpleasant meditation-related experiences.

More male participants, 28.5 per cent, experienced a particularly unpleasant experience, compared to 23 per cent of female participants.

About 30.6 per cent of those who did not have a religious belief had a particularly unpleasant experience, compared to 22 per cent of those who had a religious belief.

More people, 29.2 per cent, who practised only deconstructive types of meditation reported a particularly unpleasant experience, compared to 20.3 per cent who only engaged in other meditation types.

About 29 per cent of those who had been on a meditation retreat (at any point in life) had a particularly unpleasant experience, compared with 19.6 per cent, who had never been on a retreat.

"Most research on meditation has focussed on its benefits, however, the range of meditative experiences studied by scientists needs to be expanded. It is important at this point not to draw premature conclusions about the potential negative effects of meditation," Schlosser said.

Researchers acknowledged a number of limitations in the study.

The study only asked one question to capture prevalence of particularly unpleasant meditation-related experiences. The data does not provide any indication of the exact type of experiences or their severity and impact.

The study did not assess possible pre-existing mental health problems, which could have confounded the prevalence estimate of particularly unpleasant meditation-related experiences.

The data also does not allow researchers to clearly infer whether meditation caused these experiences. — PTI

Genetic therapy

Genetic therapy heals damage caused by heart attack (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/genetic-therapy-heals-damage-caused-by-heart-attack/771919.html>

Scientists have developed a gene therapy that can induce heart cells to regenerate and repair the damage caused by a heart attack.

Myocardial infarction, more commonly known as a heart attack, caused by the sudden blocking of one of the cardiac coronary arteries, is the main cause of heart failure.

The condition affects over 23 million population in the world, according to the World Health Organization (WHO).

At present, when a patient survives a heart attack, they are left with permanent structural damage to their heart through the formation of a scar, which can lead to heart failure in the future, according to the researchers from King's College London in the UK.

"It is a very exciting moment for the field. After so many unsuccessful attempts at regenerating the heart using stem cells, which all have failed so far, for the first time we see real cardiac repair in a large animal," said Mauro Giacca, from King's College London.

In the study, published in the journal Nature, researchers delivered a small piece of genetic material, called microRNA-199, to the heart of pigs, after a myocardial infarction which resulted in the almost complete recovery of cardiac function at one month later.

This is the first demonstration that cardiac regeneration can be achieved by administering an effective genetic drug that stimulates cardiac regeneration in a large animal, with heart anatomy and physiology like that of humans.

"It will take some time before we can proceed to clinical trials," Giacca said in a statement.

"We still need to learn how to administer the RNA as a synthetic molecule in large animals and then in patients, but we already know this works well in mice," he said. PTI

Good sleep

Good sleep, mood can help you stay sharp in old age (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/good-sleep-mood-can-help-you-stay-sharp-in-old-age/771552.html>

Memory slips with age, but getting a fair amount of sleep every night and having a cheerful mood each day may help you stay sharp even when you grow old, suggests new research.

Poor sleep quality and a depressed mood are linked to a reduced likelihood of remembering a previously experienced event, said the study published in the Journal of the International Neuropsychological Society.

The researchers found strong associations between working memory and three health-related factors such as sleep, age and depressed mood.

Working memory is the part of short-term memory that temporarily stores and manages information required for cognitive tasks such as learning, reasoning and comprehension.

Working memory is critically involved in many higher cognitive functions, including intelligence, creative problem-solving, language and action-planning. It plays a major role in how we process, use and remember information.

The study found that age is negatively related to the "qualitative" aspect of working memory - that is, how strong or how accurate the memory is.

"Other researchers have already linked each of these factors separately to overall working memory function, but our work looked at how these factors are associated with memory quality and quantity - the first time this has been done," said Weiwei Zhang, Assistant Professor at the University of California, Riverside in the US.

"All three factors are interrelated. For example, seniors are more likely to experience negative mood than younger adults. Poor sleep quality is also often associated with depressed mood", Zhang added.

The researchers performed two studies. In the first study, they sampled 110 college students for self-reported measures of sleep quality and depressed mood and their independent relationship to experimental measures of working memory.

In the second study, the researchers sampled 31 members of a community ranging in age from 21 to 77 years. In this study, the researchers investigated age and its relationship to working memory.

The researchers are the first to statistically isolate the effects of the three factors on working memory quantity and quality.

Although all three factors contribute to a common complaint about foggy memory, they seem to behave in different ways and may result from potentially independent mechanisms in the brain.

These findings could lead to future interventions and treatments to counteract the negative impacts of these factors on working memory. IANS

Fitness goals @ 60(The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/fitness-goals-@-60/771055.html>

As life expectancy and India's ageing population rise, there is a need to adopt healthy living practices in the sunset years

Increasing life expectancy and improvements in longevity have ensured that we are facing the prospect of a burgeoning elderly population the world over. Medical advancements have

resulted in decline in infectious diseases and in treatment of non-communicable diseases to help prolong lives and improve wellness.

Having healthy living practices, staying physically active and mentally agile can help you lead productive and healthy older lives. An American study published in the journal, the Archives of Internal Medicine, found that a 70-year-old person has a 54 per cent chance of reaching 90 if s/he does not smoke or have diabetes, has healthy weight and blood pressure, and exercises. This clearly demonstrates that health and wellness in old age is directly related to lifestyle and living habits.

Here are some factors that are critical in improving health and wellness after 60:

Watch your plate

While the importance of healthy eating must never be underestimated, it becomes vital once you cross 60. Limit processed foods and foods rich in sugar. Eat a variety of foods rich in antioxidants. Lean meats and proteins such as chicken and legumes, fish rich in omega-3 fatty acids, calcium-rich dairy products and a variety of fruits and vegetables must be part of your daily diet. Our digestive system slows down as we age. Eating fibre-rich foods keeps the digestive system healthy. Also, consult with your doctors about the need to take calcium, vitamin D and magnesium supplements.

Stimulate your mind

Many studies suggest that regularly engaging in mind stimulating activities can help elderly people stay mentally sharp and reduce the risk of developing dementia and cognitive decline. Keep yourself engaged in reading, playing board games, crossword puzzles or Sudoku.

Find a new purpose

Elderly people often lose interest in life or feel purposeless after their children leave home. It is important for parents of all ages to retain a passion in life, something they can always look forward to even if their family and friends are not around. Finding a purpose in life is critical to the overall well-being of an elderly person. Learn to play guitar, join a book club, volunteer for an NGO, teach under-privileged neighborhood kids. It is never too late to find a purpose in life.

Join a support group

Social support groups for the elderly can put them in touch with a large number of similar people. Having similar objectives and purposes can not only offer emotional and psychological support but also provide them the right motivation. Join a support group of the elderly and find like-minded friends who can join you in your daily routine and new interests like walking, yoga, playing chess or cards, etc.

Get social

Ageing must not turn you into a recluse. We often observe elderly people, especially in India, cut themselves off socially and start spending time alone. Increasing number of nuclear families means that a large number of elderly parents are today staying alone with their children settled in different places. There is evidence that loneliness increases chances of depression and illness. This is why elderly people must make special efforts to stay socially active, keep in regular touch with relatives and be an active part of the community they live in. A Gallup poll conducted in 2011 suggested that senior citizens who were socially active were happier and were less likely to be stressed.

Be physically active and maintain healthy weight

Exercising daily is the key to long-lasting health. Get at least 30 minutes of exercise daily but make sure you do what is appropriate for you. It is important to choose an activity that you enjoy — walking, yoga, swimming — any mild aerobic exercise is critical for maintaining good heart health and flexibility.

—The writer is director, CHAI Creative and Return of Million Smiles.

Anger more harmful than sadness

Anger more harmful than sadness for older adults (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/anger-more-harmful-than-sadness-for-older-adults/771005.html>

During the study, participants completed questionnaires about how angry or sad they felt.

Anger is more harmful than sadness for older adults and may lead to health complications—potentially increased inflammation which is associated with chronic illnesses like heart disease, arthritis and cancer, say researchers.

The study, published in the journal *Psychology and Aging*, shows that anger can lead to the development of chronic illnesses whereas sadness did not.

"Sadness may help older seniors adjust to challenges such as age-related physical and cognitive declines because it can help them disengage from goals that are no longer attainable", said study lead author Meaghan A Barlow from the Concordia University in the US.

For the study, the researchers analysed data from 226 older adults ages 59 to 93 from Montreal, Canada and grouped participants as being in early old age (59 to 79 years old) or advanced old age (80 years or older).

During the study, participants completed questionnaires about how angry or sad they felt.

The research examined whether anger and sadness contributed to inflammation, an immune response by the body to perceived threats, such as infection or tissue damage.

"We found that experiencing anger daily was related to higher levels of inflammation and chronic illness for people aged 80 or above, but not for younger seniors," added study co-author Carsten Wrosch.

"Younger seniors may be able to use that anger as fuel to overcome life's challenges and emerging age-related losses and that can keep them healthier", Barlow added.

The researchers suggest that education and therapy might help older adults reduce anger by regulating their emotions or by offering better coping strategies to manage the inevitable changes that accompany ageing. — IANS

Eat, delete, and repeat (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/eat-delete-repeat/771053.html>

Binge eating has emerged as a serious disorder that can affect physical and mental health and create many complications

Binge eating disorder (BED) is a severe, life-threatening, yet a treatable, eating disorder characterised by recurrent episodes of eating large quantities of food. Other characteristics include a sense of loss of control during the episode; eating continuously without feeling hungry; experiencing embarrassment, feeling disgusted, depressed or guilty afterwards.

Compared to other eating disorders such as anorexia and bulimia nervosa that are usually present in the teenage or adolescent years, binge eating disorder can be present in people of all age groups.

Emerging as one of the latest eating disorders of the millennium, this problem can have a huge impact on overall health, longevity, quality of life etc. Many young children, adolescents and even adults in their twenties or thirties tend to binge eat due to the availability of huge variety of junk and colourful food .

Diagnosing the disorder

Almost everyone overeats on occasions, having second or third helpings of a holiday meal. There are no obvious physical signs or symptoms when you have binge-eating disorder. You may be overweight or obese, or you may have a normal weight. However, there are several behavioural and emotional signs and symptoms that can help in its diagnosis. These may include:

Recurrent episodes of binge eating can occur averaging a minimum of twice per week for six months.

An episode of binge eating is characterised by:

Eating too soon too much e.g. within any 2-hour period eating an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.

A sense of lack of control over eating during the episode.

The binge eating episodes are associated with three (or more) of the following:

Eating until feeling uncomfortably full

Eating large amounts of food when not feeling hungry

Eating alone because of feeling embarrassed by how much one is eating

Feeling disgusted with oneself, depressed, ashamed or guilty afterwards

Experiencing depression and anxiety

Prevention and treatment

Although it might not be possible to prevent all cases of binge eating disorder, it is helpful to begin treatment in people as soon as their symptoms are recognised. In addition, teaching and encouraging healthy eating habits in childhood and realistic attitude about food and body image also might be helpful in preventing the development or worsening of eating disorders. Nevertheless, the disorder can be managed in various ways.

Psychotherapy is suggested and is helpful to a large extent because it involves an effective blend of cognitive therapy (better understanding and interpretation of situations) and behavioural therapy (meaningful impact on improved behaviour). This can result in better outcome due to a personalised / tailor-made approach.

Medications can be given for treating depression / ADHD, since binge eating is the net result of these medical conditions.

Family counselling is usually required for the successful treatment of this disorder as all family members need to be supportive of the affected person should not feel not being wanted in the family.

Group therapy is another effective way to address the problem since sharing of common feelings and experiences among those with similar behavioural response can go a long way in helping the patient.

Lifestyle modifications such as regulated hours of sleeping, encouraging good sleeping habits, stocking the refrigerator with healthy, nutritious food rather than junk foods. The “bingeing” literally needs to be curtailed without compromising on the quality, variety, satiety of the food.

Motivating for mindful eating can help in treating BED to a great percentage. Intelligent amalgamation of “balanced eating and regular exercise under medical supervision is recommended.

What can cause the disorder

While the exact causes of binge eating are unknown, it can result from a combination of biological, psychological, environmental and social factors.

Biological: Hormonal irregularities or genetic mutations.

Psychological: There is strong connection between depression and binge eating. Negative body image, low self-esteem and difficulty in dealing with intense emotions can be a contributing factor.

Social and cultural: Traumatic circumstances, peer pressure, social or public ridicule or comments about body or weight, may negatively affect vulnerable persons.

Complications and risks

The aftermath of binge eating can signify corollaries ranging from risk for heart failure, reduced resting metabolism and slowed digestion, inadequate nutrition/malnutrition to threat to life. When you overeat, you wind up with a sore, stuffed belly. Everyone feels like this from time to time. But if you have binge eating disorder, your eating habits could lead to serious problems that might last a lifetime.

Stress

Stress in early life may up depression risk: Study (The Tribune: 20190514)

<https://www.tribuneindia.com/news/health/stress-in-early-life-may-up-depression-risk-study/770494.html>

Facing adversities in early life may put people at the risk of developing negative thinking, which could lead to major depressive disorder, a study has found.

The findings, published in the journal Neuropsychopharmacology, provide biological and psychological evidence to support work first proposed in the 1960s.

Researchers from the University of Bristol in the UK used a rodent model of early life adversity to show that offspring are much more sensitive to negative biases in their cognition when treated with the stress hormone, corticosterone.

The research has shown a dose of corticosterone had no effect in normal rats but caused a negative bias in the early life adversity animals. The study also found that the early life adversity rats were less likely to anticipate positive events and failed to properly learn about reward value.

These impairments in reward-related cognition are particularly interesting as one of the main features of depression is a loss of interest in previously enjoyable activities.

The findings support the idea that those at risk of developing mood disorders may have impairments in the way they learn about and use their memories about how rewarding an experience has been to then guide and motivate them to repeat the activity.

The researchers suggest that these neuropsychological effects might explain why early life adversity can make people more likely to develop depression.

“This study supports a wider body of literature which suggests that depression may develop from an interesting yet complex interaction between biological and psychological processes,” said Emma Robinson, professor at University of Bristol.

“As we start to understand these better we hope that the knowledge we generate can be used to better guide current and future treatments,” Robinson said in a statement.

“Our larger body of work suggests that the effectiveness of current antidepressant treatments might be linked to how much a person is able to re-engage with their environment and their level of social support,” she said.

“The findings also add further evidence to support the validity of this relatively new area of research into mood disorders, particularly studies using animals to understand the neurobiology of affective biases and how they contribute to normal and pathological behaviour,” she added.

Studies in patients have shown that depression is linked to changes in how the person processes information particularly emotional information.

People with depression have a negative view of the world which can be measured by looking at how they process information such as emotional faces and words. However, whether this causes the illness or are a consequence is not known.

The researchers developed a method to use in rodents where similar neuropsychological processes were measured.

One of the tasks, the affective bias test, looked at how simple associations between a specific cue, a bowl with a specific digging substrate in it, and a reward, a food pellet, could be biased by the animal’s affective state when they learn about it.

When animals learn the association in a negative affective state they remember it in a more pessimistic way whilst memories formed in a positive affective state are remembered in a more positive way.

The biases the study was able to measure in rodents correlated exactly with how these same treatments affect peoples' mood in the long-term, something which no other animal test in psychiatry has

Early stage diabetic retinopathy

AI project eyes early stage diabetic retinopathy (The Tribune: 20190514)

<https://www.thehindu.com/sci-tech/health/ai-project-eyes-early-stage-diabetic-retinopathy/article27119540.ece>



Onset diagnosed in 92 patients at 18 civic-run Mumbai dispensaries with device attached to smartphone

In a first for Mumbai, early stage diabetic retinopathy has been detected using artificial intelligence (AI) at civic-run dispensaries. The unique project is being implemented by the Aditya Jyot Foundation for Twinkling Little Eyes (AJFTLE) and, in a span of eight months, nearly 1,300 diabetes patients have been screened on a retinal imaging device attached to a smartphone.

Commenced in August 2018, the Foundation has screened patients in 18 civic-run dispensaries across the city. Till March this year, 92 patients were diagnosed with early stage diabetic retinopathy and referred to municipal hospitals or the Aditya Jyot Eye Hospital for further treatment.

“Diabetic retinopathy is tricky because there are no early signs. That’s why screening is the only way to detect the complication early and prevent diabetic blindness,” said eye surgeon Dr. S Natarajan, also managing trustee of AJFTLE.

Common cause

Diabetic retinopathy is the commonest diabetic eye disease; it damages blood vessels in light-sensitive tissue at the back of the retina.

While some patients may have symptoms like blurred vision or impaired colour vision, it’s a common cause of blindness in the diabetic population. A robust screening programme is thus the need of the hour.

As a part of the AI project, technicians from the Aditya Jyot Foundation visit civic dispensaries along with Remedio Fundus on Phone, a portable device attached to a smartphone equipped with retinal imaging.

After the patient’s eye images are clicked, the AI on the device screens them for signs of diabetic retinopathy, and prompts technicians on whether they should be referred to a hospital or not. If the image is unclear, the device also prompts a retake of the picture.

Besides diabetic retinopathy, 97 patients, who had been referred, were diagnosed with cataract, and 69 had other eye diseases, including retinitis pigmentosa, age-related macular degeneration and glaucoma, of which they were unaware.

Not the last word

“The AI diagnosis cannot be termed as the last word. Thus, the diagnosis is verified by an ophthalmologist when the patient is referred further. But this is an excellent tool to indicate the risk of retinopathy in patients. Also, the added advantage is that the device does not depend on [an Internet] network and is completely offline,” said Dr. Radhika Krishnan, AJFTLE’ chief executive officer, adding the initiative was in the process of expanding to 60 civic dispensaries in Mumbai.

A growing challenge

The World Health Organisation (WHO) states that diabetes is a growing challenge in India, with an estimated 8.7% diabetic population in the age group of 20 to 70 years. “There are an estimated 73 million diabetics in the country. Of these, nearly 25% are at the risk of diabetic retinopathy,” said Dr. Natarajan.

Rural areas

Dr. Natarajan is certain that the screening programme can be replicated anywhere in India, especially in rural areas. “Unskilled or semi-skilled people can be trained to conduct the screening, which will go a long way in preventing blindness,” he said.

Heart Attack (The Asian Age: 20190514)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12996152>



AI PIPS HUMANS IN PREDICTING HEART ATTACK

London, May 13: Scientists have developed an artificial intelligence (AI) system that is better than human doctors at predicting the risk of heart attack or death.

By repeatedly analysing 85 variables in 950 patients with known six-year outcomes, an algorithm “learned” how imaging data interacts.

It then identified patterns correlating the variables to death and heart attack with more than 90 per cent accuracy. Machine learning, the modern bedrock of AI, is used every day, researchers said.

Google’s search engine, face recognition on smartphones, self-driving cars, Netflix and Spotify recommendation systems all use machine learning algorithms to adapt to the individual user. “These advances are far beyond what has been done in medicine, where we need to be cautious about how we evaluate risk and outcomes. We have the data but we are not using it to its full potential yet,” said Luis Eduardo Juarez-Orozco, of the Turku PET Centre in Finland.

Doctors use risk scores to make treatment decisions. However, these scores are based on just a handful of variables and often have modest accuracy in individual patients.

Through repetition and adjustment, machine learning can

Kidney Stone ((The Asian Age: 20190514)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12991439>

WHY IS THERE A RISE OF KIDNEY STONES IN WOMEN

WITH AN INCREASING NUMBER OF WOMEN REPORTING WITH THE DISEASE, KIDNEY STONES SEEM TO HAVE BECOME AN INDICATOR OF THE NARROWING

KANIZA GARARI

DECCAN CHRONICLE

✓ An estimated 12 per cent of the Indian population has been found to suffer from kidney stones, and clinical evaluations over the past decade have revealed an increasing number of women reporting with the problem. Such statistics are proving contrary to the popular medical belief according to which men were regarded as more likely to suffer from kidney stones owing to their diet and long working hours, thereby indicating a reduction in the gender gap, remarked senior consultant urologist Dr Muruganandham K.

Q What could be causing this rise in the number of women suffering from kidney stones?

More woman than men between 18 and 39 years of age have been found to suffer from kidney stones. This steady increase in the diagnosis of kidney stones in women is facilitated by the advanced diagnostic tools that

we have available today.

Obesity, recurrent urinary tract infections, high sodium diet, dehydration, and diabetes have been noted to be the most common risk factors. Dietary changes — switching to high protein, low carbohydrates diets in order to lose weight — can also increase the risk of kidney stones.

Q Is it also true that calcium supplements can cause kidney stones?

Calcium supplements taken within the recommended allowance are not just safe but also quite beneficial. Further, when taken with meals, calcium binds with the oxalate from the food, thereby reducing the prospect of stone formation. It is, however, highly advisable to take calcium supplements only as prescribed by a physician.

Q Can the hormonal changes in women post menopause after their kidneys?

Post-menopausal women on estrogen therapy are at an increased risk of stone formation.

Q Do women suffering from kidney stones experience a different kind of pain as compared to men?

No. Pain is the



Dr Muruganandham K, senior consultant urologist

most common symptom of kidney stones, and its severity varies from person to person. However, it has nothing to do with one's gender.

One may feel pain in one's sides or back, below the ribs,

in the groin or lower abdomen. Pain is also quite apparent when passing urine, and one may have to go more often than usual. Lastly, the pain may vary in its frequency of occurrence, intensity, and can get really intense if not addressed in time.

Q Do the symptoms of kidney stones in women differ from those in men?

Not at all. As described earlier, pain is the primary indicator of kidney stones, in addition to which, burning during urination and frequent and urgent urination have also been noted among a large number of patients. Some patients report bloody, cloudy, or smelly urination. In more serious cases, large kidney stones can get stuck in the ureter, thereby blocking passage, and that can slow down and sometimes even stop the flow of urine. In a lesser number of cases, patients have reported experiencing nausea accompanied by fever and chills.

Q Do the symptoms show very clearly in the early stages of the disease?

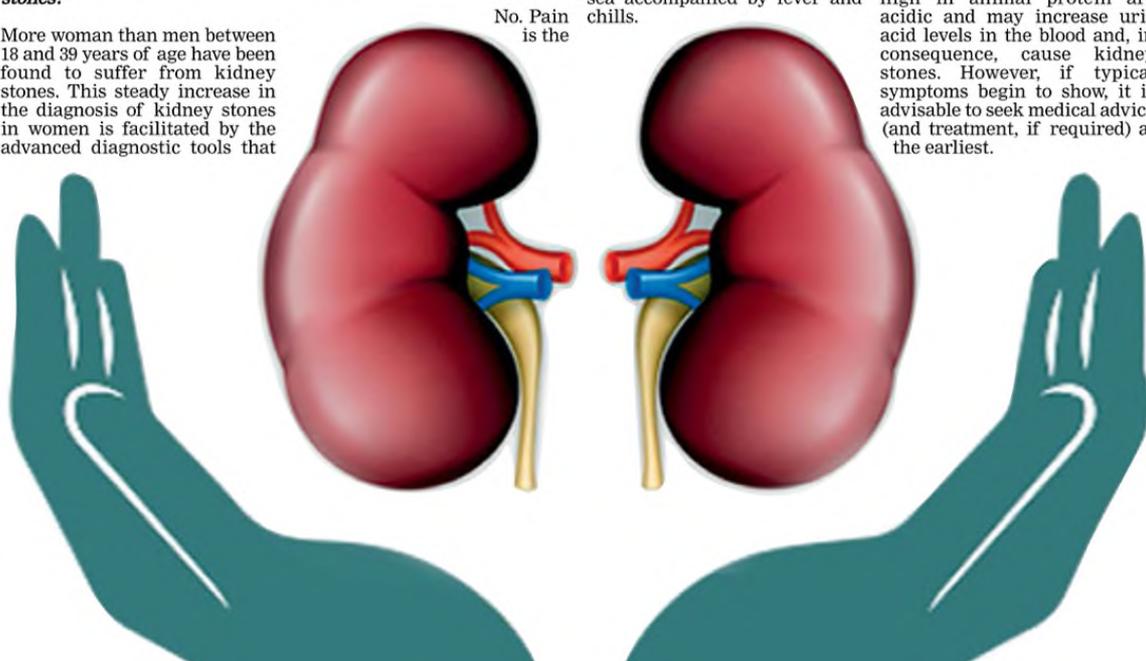
Most patients in urban areas manage to identify their symptoms and seek treatment as required. However, a considerable delay in the identification of symptoms and treatment has been noted in rural areas. This can be attributed to the lack of awareness and poor access to health care in such areas.

Q Can kidney stones recur?

Studies have shown a 50-50 chance of recurrence within five-seven years. Most doctors recommend an ultrasound scan once every year in the follow-up post recovery. In addition to medication, a healthy modification in diet and lifestyle has been noted to reduce the likelihood of recurrence.

Q What specific precautions can women take to reduce the risk of developing kidney stones?

There's no certain way to prevent kidney stones but modifications in diet and lifestyle can help reduce the risk. Drinking adequate water — three to four litres a day — helps dissolve urine salts that can otherwise lead to stones. Eating less salt can further help by keeping urine calcium levels in check. Processed food, canned goods, and cold cuts must be avoided. Meat consumption is alright in moderation, but high-protein diets must be avoided — foods high in animal protein are acidic and may increase uric acid levels in the blood and, in consequence, cause kidney stones. However, if typical symptoms begin to show, it is advisable to seek medical advice (and treatment, if required) at the earliest.



Delhi's free medicine

Expanded in 2016, Delhi's free medicine list has shrunk again (Hindustan Times: 20190514)

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

NEW DELHI: Two years after expanding the state essential drugs list (EDL) from 406 to include 1,390 medicines in 2016, Delhi government has whittled it down to 920 medicines in 2017, and 816 medicines in 2018, according to data from Delhi government's outcome budget report.

SAUMYA KHANDELWAL/HTARCHIVE

The EDL catalogues all medicines available for free in Delhi government hospitals and dispensaries.

The EDL catalogues all medicines and consumables that are available for free in Delhi government hospitals and dispensaries.

In 2016, the state government expanded its EDL following the AAP government's announcement that all state-run hospitals will dispense all medicines free.

"At that time, all the departments in state government hospitals were asked to provide a list of medicines that were being prescribed by them and a committee of clinicians compiled them to create the essential drug list. It was later observed that some of the medicines were required in very small quantities, so it made no sense to add them to the EDL. The hospitals have local purchasing power and can procure these medicines as and when needed," a senior Delhi government's health department official, said.

The expanded list also had the same formulations in different potency and combinations, which made the number of medicines on the list appear inflated, explained experts.

"The 406 medicines in the 2013 EDL were available in almost 800 formulations, but the 2016 list counts each of these formulations – like paracetamol tablet and paracetamol syrup – as two different drugs. So, the number of medicines procured by the central procurement agency (CPA) remained almost the same," another senior official from the health department said. The CPA procures drugs, consumables and equipment in bulk for all government hospitals.

The list is being rationalised, Delhi health secretary said. "From what I know, it is not the number of drugs but too many formulations and alternatives that were in the list which have been reduced," Dr Sanjeev Khirwar, Delhi health secretary, said.

“I do not think that the list should be reduced. There are around 1,500 drugs in the Delhi market and the state government’s 800 formulations will be for 400 drugs. So, if the government is only providing 400 of 1,500 medicines, there will be a huge gap in patient care. The national list must be expanded, too. If the budget does not permit it, then we must follow the UK system wherein instead of asking patients to buy some medicines from private shops, the government charges for the prescription. The government can charge ₹5 or ₹10 for every prescription and provide all medicines,” Dr CM Gulhati, editor, Monthly Index of Medical Specialities (MIMS), said.

The Delhi list needs to be further rationalised, said one of the officials. “The numbers have come down, but there is a need for further rationalisation. In 2016, the list was created by compiling medicines needed by doctors and was not based on a formula. Also, the new list did not specify which medicines were to be available at what level of the facility. In the next revision, we will have to categorise the medicines depending on whether they should be available in the mohalla clinics, polyclinic or the hospitals,” the official said.

“I believe all medicines should be available at all levels of government’s health-care facility; if a heart patient has been diagnosed and put on some long-term drugs at a super speciality hospital, why should (s)he have to come back each time to the hospital to get medicines?” Dr Gulati said. Even now, of the 816 medicines, only 86 are dispensed at mohalla clinics and 242 at Delhi government-run dispensaries.

Air quality

Delhi: Marginal improvement in air quality, city to see more rain, thunderstorms (The Indian Express: 20190514)

<https://indianexpress.com/article/cities/delhi/delhi-marginal-improvement-in-air-quality-city-to-see-more-rain-thunderstorms-5725943/>

According to officials at the IMD, the reason behind the rain and thundershowers is an active western disturbance over Himachal Pradesh.

Delhi: Air quality touches very poor, likely to be severe today

Air quality still severe, three-day construction ban in Delhi-NCR

Death By Breath: Delhi government fined Rs 25 crore over pollution

delhi air, delhi air pollution, delhi air quality, air pollution, air pollution delhi, delhi rains, delhi rains today, delhi weather today

A view of East Delhi. Pollution remained in the ‘very poor’ category. (Express Photo by Abhinav Saha)

With dust continuing to bring down city’s air quality, rain and strong winds on Monday offered some respite.

Delhi’s air quality, which was recorded in the ‘very poor’ category on Sunday as well as Monday, took a turn for the better on Monday evening. According to officials at India Meteorological Department, the much awaited showers, albeit light, meant that the concentration of particulate matter in the air dipped, improving air quality.

At the RK Puram air quality monitoring station for example, PM 10 concentration, which should be below 100 micrograms per cubic metre, was recorded at 537 µg/m³ at 6 pm. After the thundershowers, it dipped to 145 µg/m³ at 10 pm.

Similarly, at the Sri Aurobindo Marg air quality monitoring station, the concentration of PM 2.5 improved from 301 µg/m³ at 8 am to 17 µg/m³ at 10 pm. The standard for PM 2.5 is 60 µg/m³.

According to officials at the IMD, the reason behind the rain and thundershowers is an active western disturbance over Himachal Pradesh. “The whole of this week is expected to see light rain or thunderstorms. The month of May is also when these occurrences are more common because of the interaction of hot air in the area with any cooler wind system that enters it. The clash of the two systems – local and regional – leads to thunder and dust storms,” said an IMD official.

While the wind is coming in from the West, where crop residue burning has been picking up over the last few days, officials said that the impact was not significant on air quality yet.

“In Delhi, the haze and poor air quality is primarily because of dust. Since rain has eluded the area for the past 10 days at least, there is a lot of loose dust that is being picked up by the wind. With rain, we expect the air quality to improve Tuesday onwards,” said an IMD official.

Beware of using any skin cream (The Times of India: 20190514)

Read more at:

http://timesofindia.indiatimes.com/articleshow/69315250.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Hypertension

As hypertension preval .. (The Times of India: 20190514)

Read more at:

http://timesofindia.indiatimes.com/articleshow/69316127.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

मधुमेह से बचाएगा काला गेहूं (HindustanL: 20190514)

http://epaper.livehindustan.com/textview_5875_62166210_4_22_14-05-2019_1_0.html

जैव प्रौद्योगिकी विभा

मधुमेह



नई दिल्ली | विशेष संवाददाता

आप अगर मधुमेह और कोलेस्ट्रॉल से जूझ रहे हैं, तो आपको जल्द एक राहतभरी खबर मिलेगी। इनसे लड़ने वाला और पोषक तत्वों से भरपूर काला और गुलाबी गेहूं जल्द बाजार में होगा।

जैव प्रौद्योगिकी विभाग इस नई किस्म को बाजार में लाने की तैयारी में है। कहा जा रहा है कि विभाग द्वारा विकसित यह किस्म आम गेहूं से ज्यादा पौष्टिक है। चूहों पर इसके परीक्षण में पाया गया है कि यह मधुमेह और कोलेस्ट्रॉल से बचाव में भी कारगर है। जैव प्रौद्योगिकी विभाग इसका पेटेंट भी हासिल कर चुका है और इसे बाजार में उतारने को दस कंपनियों के साथ समझौते पर हस्ताक्षर किए हैं।

Migrain (HindustanL: 20190514)

http://epaper.livehindustan.com/imageview_5875_62042780_4_1_14-05-2019_i_22.pagezoomsinwindows.php

गर्भावस्था में माइग्रेन से गर्भपात का खतरा

नई दिल्ली | हिटी

जिन महिलाओं को माइग्रेन की शिकायत है उनको गर्भावस्था के दौरान कई तरह की मुसीबतें झेलनी पड़ सकती हैं। एक शोध में पता चला है कि माइग्रेन से पीड़ित गर्भवती महिलाओं में गर्भपात, समय से पहले बच्चा होना और घातक रूप से प्री-एक्लेमप्सिया (यह एक ऐसी स्थिति है जो गर्भावस्था के दौरान उत्पन्न होती है) विकसित होने की आशंका अधिक होती है।

डेनमार्क के शोधकर्ताओं ने 2,50,000 मांओं पर एक शोध किया। इसमें उन महिलाओं की संख्या ज्यादा थी, जिनका माइग्रेन के चलते गर्भपात हो गया या समय से पहले बच्चे का

दावा

- डेनमार्क के शोधकर्ताओं ने 2,50,000 मांओं पर किया शोध
- समय से पहले बच्चा होना, प्री-एक्लेमप्सिया होने की आशंका

जन्म हो गया। शोधकर्ताओं के मुताबिक, जिन महिलाओं को बहुत अधिक सिरदर्द होता है उनमें गर्भावस्था के दौरान उच्च रक्त चाप से प्रभावित होने की आशंका 50 फीसदी अधिक होती है। वहीं उनमें प्री-एक्लेमप्सिया होने की संभावना 40 प्रतिशत अधिक होती है, जो एक घातक स्थिति है। इसमें मां और बच्चे दोनों की जिंदगी को खतरा होता है।

Sleeping (Hindustan: 20190514)

http://epaper.livehindustan.com/imageview_5875_61517238_4_1_14-05-2019_i_22.pagezoomsinwindows.php

अच्छी नींद से तेज रहेगा दिमाग

न्यूयॉर्क। अगर आप हर रात अच्छी नींद लें, हर दिन आपका मूड अच्छा रहे तो दिमाग बुढ़ापे में भी उतना ही तेज रहेगा।

एक शोध के अनुसार नींद की खराब गुणवत्ता और खराब मूड का संबंध पुरानी घटनाओं को भूल जाने से संबंधित है। इंटरनेशनल न्यूरोसाइकोलॉजिकल सोसाइटी जर्नल में इस शोध को प्रकाशित किया गया है। शोधकर्ताओं के अनुसार दिमागी कार्यक्षमता तीन महत्वपूर्ण कारकों-नींद, मूड व उम्र से संबंधित है।



सिजोफ्रेनिया के इलाज में ब्रोकली मददगार

नई दिल्ली | हिटी

शोध

दिमागी बीमारी सिजोफ्रेनिया के इलाज में ब्रोकली काफी कारगर साबित हो सकती है। एक हालिया शोध में यह दावा किया गया है।

वैज्ञानिकों को पता चला है कि यह सब्जी खाने से दिमाग में होने वाला रासायनिक असंतुलन ठीक होता है और इससे सिजोफ्रेनिया के मरीजों को आराम मिल सकता है।

वैज्ञानिकों ने ब्रोकली के अंकुरों से लिए गए पदार्थ सलफोराफेन का

- दिमाग के रासायनिक असंतुलन को ठीक करती है ब्रोकली
- ग्लूटामेट और ग्लूटाथिवन की मात्रा को बढ़ाती है

इस्तेमाल ग्लूटामेट और ग्लूटाथिवन की कम मात्रा को दोबारा सामान्य स्तर पर बहाल करने में किया। यह रसायन दिमाग की कोशिकाओं के बीच संदेश भेजने का काम करते हैं और इनका संबंध सिजोफ्रेनिया से है।

Electronic Toung ((Hindustan: 20190514)

http://epaper.livehindustan.com/imageview_5875_62040610_4_1_14-05-2019_i_22.pagezoomsinwindows.php

इलेक्ट्रॉनिक जीभ मसालेदार खाने में अंतर बताएगी

वाशिंगटन। वैज्ञानिकों ने एक ऐसी इलेक्ट्रॉनिक जीभ बनाई है जो इंसानों की जीभ से भी ज्यादा सटीकता से मसालेदार खाने को चख सकती है। मसालेदार खाना खाने से जीभ पर मौजूद स्वाद कलिकाएं (टेस्ट बड) जल्दी बेकार हो जाती हैं। इससे मसालेदार खाना बनाने और बेचने वालों के सामने एक चुनौती खड़ी हो जाती है।

अमेरिका की वाशिंगटन स्टेट यूनिवर्सिटी की शोधकर्ता कर्टनी श्लॉसरेक के अनुसार दो कम मसालेदार खानों के सैंपल के बीच अंतर का पता लगा मुश्किल हो जाता है। दो अत्यधिक मसालेदार खाने के सैंपल के बीच अंतर को पता लगाना भी मुश्किल होता है।

जर्नल ऑफ फूड साइंस में प्रकाशित शोध के अनुसार इलेक्ट्रॉनिक जीभ में दो तरह के मसालेदार खानों के बीच अंतर बताने की क्षमता होती है। टेस्टिंग के दौरान सबसे बड़ी चुनौती यह होती है कि कुछ सैंपल चखते ही इंसानी स्वाद कलिकाएं बेकार हो जाती हैं।
