



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20190101

Vitamin D

Low Vitamin D intake found in asthma patients (New Kerala: 20190101)

<https://www.newkerala.com/news/read/83922/low-vitamin-d-intake-found-in-asthma-patients.html>

The recent research has found a reduced Vitamin D intake in occupational asthma patients. Previously, Vitamin D intake was rarely evaluated in cases of occupational asthma regardless of it being an important part of nutrition. The main objective of this study was to assess the Vitamin D intake in occupational asthma patients and its relation with body mass index, comorbidities related to Vitamin D deficit, lung function and quality of life. The researchers found a reduced Vitamin D intake in both obese and non-obese asthma patients. The study was published in JAMA Network Open. Lower intake was found in mild asthma group compared to severe asthma group. Regression analysis revealed a different pattern in the asthma groups. The Impact score in irritant asthma indicated a stronger relationship with BMI while the symptom score in allergic asthma group was closely associated with the Vitamin D intake. The researchers concluded that the relation between obesity and Vitamin D on clinical cores and lung function depended on the asthma phenotype. It was recommended that the nutritional interventions in all occupational asthma phenotypes should be an important aspect in future treatments, especially targeting body fat reduction and achievement of daily recommended intake of Vitamin D.

Gut bacteria

Here's how gut bacteria can curb harmful effects of high BP (New Kerala: 20190101)

<https://www.newkerala.com/news/read/83939/heres-how-gut-bacteria-can-curb-harmful-effects-of-high-bp.html>

To a large extent our well-being depends on what bacterial guests in our digestive tract consume as researchers have found that beneficial gut microbes can produce from dietary fibre a fatty acid called propionate which can protect against the harmful consequences of high blood pressure. The substance calms the immune cells that drive up blood pressure, according to the study published online in the journal *Circulation*. "Propionate works against a range of impairments in cardiovascular function caused by high blood pressure," said lead researcher Dominik Muller, Professor at Max Delbrück Center for Molecular Medicine in the Helmholtz Association in Berlin, Germany. "This may be a promising treatment option, particularly for patients who have too little of this fatty acid," Muller said. The results explain why a diet rich in fibre, which has been recommended by nutrition organisations for many years, helps prevent cardiovascular diseases. Whole-grain products and fruits, for example, contain cellulose and inulin fibers, from which gut bacteria produce the beneficial molecules like propionate. For the study, the researchers fed propionate to mice with elevated blood pressure. Afterwards, the animals had less pronounced damage to the heart or abnormal enlargement of the organ, making them less susceptible to cardiac arrhythmia. Vascular damage, such as atherosclerosis, also decreased in mice, the study said.

Bacteria (Asian Age: 20190101)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12180596>

Bacteria found in Irish soil may fight superbugs

London, Dec. 31: Scientists have discovered a strain of bacteria in Irish soil that can effectively fight superbugs resistant to antibiotics.

The WHO describes the problem of antibiotic resistant superbugs as "one of the biggest threats to global health, food security, and development today".

The strain, named *Streptomyces* sp myrophorea, was discovered by a team based in Swansea University in the UK.

The soil they analysed originated from an area of Fermanagh, Northern Ireland, which is known as the Boho Highlands. It is an area of alkaline grassland and the soil is reputed to have healing properties.

The search for replacement antibiotics to com-

▶ WHO describes the problem of antibiotic resistant superbugs as 'one of the biggest threats to global health, food security, and development today'

bat multi-resistance has prompted researchers to explore new sources, including folk medicines: a field of study known as ethnopharmacology. They are also focusing on environments where well-known antibiotic producers like *Streptomyces* can be found.

One of the research team, Dr Gerry Quinn, a previous resident of Boho, County Fermanagh, had been aware of the healing traditions of the area for many years.

Traditionally a small

amount of soil was wrapped up in cotton cloth and used to heal many ailments including toothache, throat and neck infections. This area was previously occupied by the Druids, around 1500 years ago, and Neolithic people 4,000 years ago.

The main findings of the research were that the newly-identified strain of *Streptomyces* inhibited the growth of four of the top six multi-resistant pathogens identified by the WHO as being responsible

for healthcare-associated infections: Vancomycin resistant *Enterococcus faecium*, methicillin-resistant *Staphylococcus aureus* (MRSA), *Klebsiella pneumoniae*, and Carbapenem-resistant *Acinetobacter baumannii*. —PTI

New Tech –Paralyzed Patient (Asian Age: 20190101)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12180587>



New tech can help paralysed patients regain hand motion

New Delhi, Dec. 31: Scientists have developed a system that can read brain signals to help users control an artificial hand just by thinking — an advance that could help stroke patients regain the ability to move their fingers.

Spinal injuries or stroke often leaves a person partially paralysed. Such disabilities leave them disconnected from their families and community.

"We want to give them a life where, using the technology, they can fulfill their basic needs, such as getting a glass of water or typing on the screen," said Dr Haider Raza, from University of Essex in the UK, one of the scientists who worked on the system.

The team, which includes researchers from Indian Institute of Technology (IIT) Kanpur, developed a brain-computer interface (BCI) that can 'read' a person's brain waves and convert them to computer signals.

Their research was recently published in the *Journal of Biomedical and Health Informatics*, *Transactions on Cognitive and Developmental Systems*, and *Journal of Neuroscience Methods*.

"BCI is technology by which we control the computer using the mind. My focus is on rehabilitation — to treat those whose brain is injured," Raza

► The new system can read brain signals to help users control an artificial hand just by thinking — an advance that could help stroke patients regain the ability to move their fingers. Spinal injuries or stroke often leaves a person partially paralysed.

ments.

"For example, if somebody just imagines moving their hands, a part of their brain gets activated. If we do this imagination exercise on a regular basis, there is a possibility of reactivating those regions," Raza said.

"However, just imagining is not enough — active practice is also needed, which is what physiotherapists do," he said. For this purpose the researchers designed an exoskeleton for the hand, which is connected with the computer.

"A stroke patient, who has lost his ability to move his hand, will imagine moving his hand. The BCI algorithm — which reads the brain signals — will detect that the patient is trying to move their hand," said Raza.

The command from the computer will move the robotic exoskeleton

Alzheimer's (Asian Age: 20190101)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12180597>

Drug that can cure Alzheimer's in 10 years?

London, Dec. 31: An injection which halts the onset of Alzheimer's could be available within ten years, experts have predicted.

The Alzheimer's Society said recent breakthroughs for the memory-robbing disorder have led scientists to a 'tipping point'.

The injection would work by muting genes that play a role in the disease developing, according to the charity.

A similar approach has already shown 'remarkable' results in trials for children with a rare spinal condition.

There are currently around 850,000 people in the UK living with some form of dementia, of which there is no cure.

Around 5.7 million patients are battling Alzheimer's in the US.

There is going to be a leap of faith moment,' Dr James Pickett, head of research at the Alzheimer's Society, told the *Telegraph*.

"There are lots of different pieces of the puzzle coming together. 'We've got all of this genetic knowledge, like cancer researchers did 30 years ago, and we're now investing in understanding it and exploiting it.'" For decades, researchers have based developing a treatment on targeting damaging proteins that build up in the brain.

However, decades worth of studies have failed to find a solution.

The injection would work by silencing specific genes already known to play a role in the disease developing.

— *Agencies*

Mobile addiction-app

An app to cure your mobile addiction (The Hindu: 20190101)

<https://www.thehindu.com/sci-tech/health/an-app-to-cure-your-mobile-addiction/article25874949.ece>

‘Digital Detox by SHUT Clinic’ tracks your phone usage and offers self-help advice

If you are one of those tech addicts who can’t help but spend most your waking life glued to your cell phone, relief may finally be at hand – on your cell phone. Doctors at the National Institute of Mental Health and Neuro Sciences (NIMHANS) have come up with a mobile app that helps people reduce their mobile usage.

The Service for Healthy Use of Technology (SHUT) clinic has developed a Digital Detox app that has been found to be effective in bringing about behavioural changes among users. The app, available on Google Playstore as ‘Digital Detox by Shut Clinic’, requires you to register. Once you sign up, it tracks your pattern of mobile usage every week and offers self-help strategies.

The app asks users to specify their addiction-related symptoms, such as sleep disturbance, eye strain, loneliness, boredom, or excess Facebook usage. It asks users if their mobile usage affects their academics, work or interpersonal relationships, and has a feature where you also have the option of sharing your progress with friends.

A pilot test of the app was done between September 2017 and September 2018 among 240 college students aged 18-25. The study found that 75.6% of the app’s users changed their mobile use pattern and showed significant reduction in the time spent on technology.

Manoj Kumar Sharma, professor of clinical psychology, NIMHANS and head of SHUT clinic, said that users were classified into three categories based on their technology usage: mild, moderate and severe. “We have enough data to indicate that those who were using tech tools in moderation have introduced lifestyle changes and now fall under the ‘mild users of technology’ category,” he said. But he added that the data was insufficient to prove if the app was helpful to those who were severely addicted to technology.

Dr Sharma said that the app’s biggest benefit was that it helped people who would otherwise not be willing to seek help. “It is in fact an irony that we are using technology to beat technology. But we realised that this is the only way out,” he said.

The app developers have followed the principle that technology de-addiction should be supportive, encouraging and fun. They now plan to further refine the app by incorporating gaming addiction in addition to internet and mobile phone addiction.

Pollution

Delhi's air quality turns 'severe' again (The Hindu: 20190101)

<https://www.thehindu.com/news/cities/Delhi/delhis-air-quality-turns-severe-again/article25845085.ece>

Due to meteorological conditions

Delhi's air quality turned 'severe' again on Thursday due to unfavourable meteorological conditions like low wind speed that prevented dispersion of pollutants, authorities said.

The Central Pollution Control Board (CPCB) data showed the overall air quality index (AQI) in the 'severe' category, while the Centre-run System of Air Quality and Weather Forecasting (SAFAR) showed an AQI of 372, which falls in the 'very poor' category.

As per the CPCB data, 22 areas recorded severe pollution, while 13 witnessed 'very poor' air quality.

In NCR, Ghaziabad and Faridabad recorded severe air quality while Gurugram and Noida recorded 'very poor' air quality.

The overall PM2.5 level — fine particulate matter in the air with a diameter of less than 2.5 micrometer — was recorded at 322 and the PM10 level at 485 in Delhi, the CPCB said.

The national Capital recorded its second highest pollution level of the year on Sunday with an AQI of 450. The air quality remained 'severe' on Monday and Tuesday. There was slight drop in pollution level and the air quality moved to the 'very poor' category on Wednesday. On Thursday, the air quality again worsened and turned 'severe'.

The Indian Institute of Tropical Meteorology (IITM) stated that the air quality is likely to improve marginally on Friday. The ventilation index is marginally favourable for dispersion of pollutants at 4,500 sqm/second, the IITM also said.

The ventilation index is the speed at which pollutants can disperse. A ventilation index lower than 6,000 sqm/second, with average wind speed less than 10 kmph, is unfavourable for dispersion of pollutants.

The overall air quality is likely to improve on Friday by a few notches, but will continue to remain in 'very poor' category during the next three days, stated the SAFAR. "Major reason for predicted increase is a decline in surface wind speed which will disperse pollutants slowly unlike yesterday [Wednesday]. Other meteorological factors are also not very favourable," the SAFAR further said.

Air quality

Air quality bad, but better compared to 2016 and 2017(Hindustan: 20190101)

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

The year might have ended with the city's air quality reading in the 'severe' zone on its last day (with an Air Quality Index value of 420), marking this December's air the foulest since 2015, but Delhi's overall air quality in 2018 was better than in 2016 and 2017.

Experts said that while antipollution measures taken this year have shown some results, Delhi could hope for even better air quality in 2019, if they are implemented with stringency and rigor throughout the year.

Data available with the Central Pollution Control Board (CPCB) — the country's apex pollution monitoring body — shows that the number of days with 'good', 'satisfactory' and 'moderate' air quality has gone up, while the number of days with 'poor', 'very poor' and 'severe' air quality has declined.

"The city's air quality has improved because of a series of anti-pollution measures that were taken in Delhi and the National Capital Region (NCR). We hope to see further improvement in 2019," a senior official of the CPCB said.

In 2018, a series of measures were taken, such as shifting from using BS-IV fuel to BS-VI fuel, shutting down the Badarpur power plant, launching the air quality early warning system, taking pre-emptive measures to control pollution levels, banning polluted fuels such as coal and kerosene in Delhi and cracking down on industries.

"The efforts taken this year have reflected well in the overall air quality, which has improved marginally. If we can sustain these efforts throughout the year, 2019 would be much better," Chandra Bhushan, deputy director general of Centre for Science and Environment, said.

But even though overall air quality in 2018 was better than previous years, this December, Delhi encountered one of its longest spells of severe air—four continuous days. Data available with the CPCB shows that Delhi encountered at least eight days of 'severe' air quality this December. While in 2015, there were no such days, in 2016 there were at least six such days. In 2017, Delhi encountered only one 'severe' air quality day in December," an official of Delhi Pollution Control Committee said.

In 2016, severe pollution spells didn't last for more than two consecutive days. The intensity of pollution was also higher this December than in 2016. While the highest air quality index value recorded in December 2016 was 427, this year it touched 450 (December 23). It dropped to 448 the next day.

"Such high levels of pollution are rarely encountered in December. They are usually seen in November around Diwali, stubble burning is on, and meteorological factors aren't favourable. Meteorology has played a very crucial role in pushing up pollution levels in December 2018," D Saha, former head of the air quality laboratory of the CPCB, said.

Diabetes

Diabetes and erectile dysfunction may be genetically linked (Medical News Today: 20190101)

<https://www.medicalnewstoday.com/articles/324048.php>

New research, published in the American Journal of Human Genetics, suggests that a genetic susceptibility to type 2 diabetes may be a cause of erectile dysfunction.

man checking his blood sugar levels in bed

New research finds evidence that erectile dysfunction and type 2 diabetes are genetically linked.

Erectile dysfunction (ED) affects approximately 30 million adults in the United States.

There are several risk factors, including older age, being overweight, and being a smoker.

Having certain other conditions, such as diabetes, some types of cardiovascular disease, and chronic liver disease, can also predispose someone to ED.

For instance, the risk of developing ED is two to three times higher in people with type 2 diabetes than in those without the condition, according to the National Institutes of Health (NIH).

So far, the evidence supporting the link between type 2 diabetes and ED has only been observational, meaning that researchers could not establish causality.

However, a new study strengthens the link between the two conditions and confirms that a genetic predisposition to type 2 diabetes can lead to ED. The findings also add to the mounting evidence that certain genetic locations are associated with ED.

Anna Murray, an associate professor at the University of Exeter Medical School, and Professor Michael Holmes, of the Nuffield Department of Population Health at the University of Oxford — both in the United Kingdom — led the new research.

Reducing diabetes risk may prevent ED

Murray and colleagues carried out a so-called genome-wide association study. In it, they examined data from over 220,000 men from three different population cohorts: the UK Biobank, the Estonian Genome Center of the University of Tartu cohort, and the Partners HealthCare Biobank.

Of the total number of men, 6,000 experienced ED. The researchers used complex genetic analysis to investigate the relationships between diabetes, body weight, and ED.

Overcoming sexual performance anxiety

Overcoming sexual performance anxiety

Performance anxiety and erectile dysfunction are common among men of all ages. We take a look at some ways to overcome these issues.

"We found that a genetic predisposition to type 2 diabetes is linked to erectile dysfunction," reports Murray, adding, "That may mean that if people can reduce their risk of diabetes through healthier lifestyles, they may also avoid developing erectile dysfunction."

ED is unlikely to be a consequence of diabetes treatment, suggest the researchers. An insufficient number of clinical trials have found that improving blood sugar control as part of diabetes treatment resulted in ED, they say, so few conclusions can be drawn about the link between ED risk and diabetes treatment.

"Erectile dysfunction affects at least 1 in 5 men over 60, yet up until now, little has been known about its cause. Our paper echoes recent findings that the cause can be genetic, and it goes further," explains Murray.

Co-first author and doctoral student Jonas Bovijn also comments on the study, saying, "We know that there is observational evidence linking erectile dysfunction and type 2 diabetes, but until now there has not been definitive evidence to show that predisposition to type 2 diabetes causes erectile dysfunction."

"Our finding is important, as diabetes is preventable, and indeed one can now achieve 'remission' from diabetes with weight loss, as illustrated in recent clinical trials. This goes beyond finding a genetic link to erectile dysfunction to a message that is of widespread relevance to the general public."

Exercise

Can exercise lower blood pressure as effectively as drugs (Medical News Today: 20190101)

<https://www.medicalnewstoday.com/articles/324046.php>

Millions of people live with high blood pressure, which can place them at risk of developing cardiovascular diseases. For this condition, doctors typically prescribe blood-lowering drugs, but could exercise help just as well?

A new study suggests that exercise can be just as effective as drugs when it comes to keeping blood pressure under control.

According to the Centers for Disease Control and Prevention (CDC), approximately 75 million adults in the United States have to manage high blood pressure, where it exceeds the threshold of 140 millimeters of mercury (mm Hg).

The condition can increase their risk of developing heart disease or experiencing a stroke, both of which are leading causes of death in the U.S.

Moreover, high blood pressure drives an expense of around \$48.6 billion per year nationally, People with high blood pressure typically follow an antihypertensive or blood pressure-

lowering treatment, which includes special medication. At the same time, specialists sometimes advise that people make lifestyle changes to help them manage their blood pressure.

One such change is to take regular, structured exercise that can be of several types:

endurance exercises, such as walking, jogging, or swimming

high-intensity interval training, involving short bursts of intensive exercise

dynamic resistance, including strength training

isometric resistance, such as the plank exercise

a combination of endurance and resistance exercises

However, no studies have yet compared the effectiveness of physical activity in lowering blood pressure with that of antihypertensive medication.

A new study in the *British Journal of Sports Medicine* — a BMJ publication — aims to address this gap in the literature.

Findings indicate similar effects

Since there are no studies that directly compare the effects of blood pressure medication with those of structured exercise, the study analyzed the data of various research projects that focused on one or other of these approaches.

The researchers — from institutions across Europe and the U.S., including the London School of Economics and Political Science in the United Kingdom, and the Stanford University School of Medicine in California — explain that structured exercise helps lower systolic blood pressure, which measures the blood pressure in the blood vessels as the heart beats.

In the current study, they looked at the data from 194 clinical trials that focused on antihypertensive drugs and their impact on systolic blood pressure, and another 197 clinical trials, looking at the effect of structured exercise on blood pressure measurements. In total, these trials collected information from 39,742 participants.

Dr. Huseyin Naci — from the Department of Health Policy at the London School of Economics and Political Science — and colleagues conducted several sets of analyses on the data from the trials.

High blood pressure control with 'exercise in a pill'

High blood pressure control with 'exercise in a pill'

Could a new pill give you the benefits of exercise and help reduce your blood pressure?

First, they compared the effects of all types of antihypertensive drugs with those of all kinds of exercise. Then, they looked at specific drug types versus specific types of exercise. Finally, they compared the impact of different exercise intensities with those of different drug dosages.

In the first instance, the investigators conducted these analyses by using data from healthy participants with normal blood pressure. Then, they repeated them with data from individuals with high blood pressure only.

They found that antihypertensive drugs were more effective in lowering blood pressure than structured exercise in the case of the general population. However, when they looked specifically at people with high blood pressure, they saw that exercise was as effective as most blood-lowering medication.

Moreover, the study authors concluded that there is "compelling evidence that combining endurance and dynamic resistance training was effective in reducing [systolic blood pressure]."

More exercise is beneficial

Still, the research team cautions that they based their analyses on many small-scale trials, and others should replicate their results with more extensive studies.

Dr. Naci and colleagues also strongly advise against giving up on antihypertensive medication and replacing it with exercise.

"We don't think, on the basis of our study, that patients should stop taking their antihypertensive medications," the researcher says in a podcast in which he speaks about the current research.

"But," Dr. Naci adds, "we hope that our findings will inform evidence-based discussions between clinicians and their patients."

The lead researcher notes that many people in the U.S. and throughout Europe lead sedentary lives and that they would benefit from taking more exercise.

At the same time, however, he emphasizes that doctors should make sure their patients can adhere to prescribed exercise regimens.

"It's one thing to recommend that physicians start prescribing exercise to their patients, but we also need to be cognizant of the resource implications and ensure that the patients that have been referred to exercise interventions can adhere to them and so really derive benefit."

Coffee

How coffee might protect against Parkinson's (Medical News Today: 20190101)

Coffee is thought to protect the brain against Parkinson's disease. A recent study investigates which compounds might give coffee its neuroprotective powers. The findings may eventually lead to innovative new treatments.

Older adults laughing with coffee

Understanding how coffee protects the brain could give Parkinson's drug discovery a boost.

More than 60,000 people are diagnosed with Parkinson's disease in the United States each year.

Symptoms include stiffness and difficulty with balance and coordination.

It is a progressive, neurodegenerative condition and, currently, there is no cure. Modern treatments can only help manage symptoms.

Scientists do not understand why some people develop Parkinson's disease, but others do not. However, they have unpicked some of the neurological changes that take place.

One of the most critical changes appears to be a buildup of a specific type of misfolded protein in the brain. This is known to trigger cell death, which eventually leads to the symptoms of Parkinson's.

The protein in question is alpha-synuclein, which aggregates and joins up with other compounds to create so-called Lewy bodies.

Alpha-synuclein can pass from neuron to neuron, spreading damage across different regions of the brain.

Parkinson's and coffee

Over the years, studies have suggested that coffee might help protect against Parkinson's disease.

Although caffeine appears to play a part in this, other molecules might be involved in the fight, too. In some studies, for instance, de-caffeinated coffee also offered protection against neurodegeneration in a model of Parkinson's disease.

Coffee contains hundreds of compounds that could potentially interact with the chemistry of the body.

On the search for coffee components that might help slow Parkinson's progression, researchers recently focused on a compound called eicosanoyl-5-hydroxytryptamide (EHT).

How coffee protects the brain

How coffee protects the brain

A recent investigation uncovers some of the mechanisms that help coffee keep mental decline at bay.

EHT is a fatty acid derivative of serotonin found in the waxy coating of coffee beans. It is not related to caffeine, and previous studies have shown it to have neuroprotective and anti-inflammatory properties.

These researchers, from the Rutgers Robert Wood Johnson Medical School Institute for Neurological Therapeutics in Piscataway, NJ, recently published their findings in the journal *Proceedings of the National Academy of Sciences*.

Joining molecular forces

In particular, the researchers wanted to understand whether caffeine and EHT could work together to fend off Parkinson's.

To investigate, they gave mice doses of caffeine or EHT; some received them separately, others were given them together. They then assessed each combination's ability to reduce the buildup of alpha-synuclein associated with Parkinson's disease.

They found that neither compound had a beneficial effect when given alone. However, when the mice consumed both EHT and caffeine, there was a significant reduction in protein buildup.

The researchers also demonstrated that mice treated with a combination of the two compounds performed better in behavioral tests.

Because there are currently no treatments that slow the progression of Parkinson's, this finding offers fresh avenues for drug researchers to tread.

More work to be done

These are early days, but the researchers are keen to continue their work. Firstly, they plan to investigate the quantities of these chemicals necessary to impart benefits.

Lead author M. Maral Mouradian explains, "EHT is a compound found in various types of coffee, but the amount varies. It is important that the appropriate amount and ratio be determined so people don't over-caffeinate themselves, as that can have negative health consequences."

The authors also understand that the hunt for active compounds in coffee is likely to take some time. Because coffee is such a complex cocktail, the authors believe that "it is not unlikely that other components of coffee play a beneficial role as well."

They also explain that the exact makeup of any cup of coffee can vary widely. This can depend on where the coffee bean grows, as well as the techniques used to harvest, roast, and brew it.

There will need to be a great deal more research before researchers fully unravel the spectrum of coffee's benefits.

Physical activity

Bipolar: Physical activity may boost mood and energy (Medical News Today: 20190101)

<https://www.medicalnewstoday.com/articles/323995.php>

New research, published in the journal JAMA Psychiatry, found that higher levels of physical activity boost mood and energy levels. The benefits were particularly noticeable in people with bipolar disorder.

silhouette of a woman looking victorious

Being physically active might help people with bipolar disorder fight off depressive symptoms.

In the United States, almost 3 percent of adults experienced bipolar disorder "in the past year."

Around 4.4 percent of adults have bipolar at some point in their lives.

Depression is even more prevalent, both in the U.S. and across the globe.

In fact, about 8 percent of people over the age of 20 in the U.S. have depression, according to the Centers for Disease Control and Prevention (CDC).

With 300 million people living with depression, the World Health Organization (WHO) describe it as the "leading cause of disability worldwide."

New research may help alleviate depressive symptoms, particularly in people with bipolar disorder.

A team led by Vadim Zipunnikov, Ph.D. — an assistant professor in the Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health in Baltimore, MD — found that increased physical activity improves mood and energy levels for those living with the condition.

How physical activity affects mood

Zipunnikov and colleagues asked 242 participants, aged 15–84, to wear activity tracking devices and keep electronic diaries of their mood and energy over the course of 2 weeks.

The participants — 150 of whom were female — used the diary four times per day to assess their perceived energy and mood using a seven-point scale that ranged from "very tired" to "very energetic" and from "very happy" to "very sad."

The researchers accounted for each individual's daily routines and designated four time points throughout the day: one in the morning, one at lunch, one at dinner time, and one at bedtime.

Bipolar disorder: A good diet may boost treatment

Bipolar disorder: A good diet may boost treatment

A person's diet may affect how well they respond to treatment.

Overall, the study found that higher physical activity at any one of these time points correlated with better mood and higher energy levels at the following time point throughout the day.

The correlations also worked the other way around, meaning that higher energy levels at one point in the day were associated with higher levels of physical activity at the next time point.

These beneficial effects were strongest in a subgroup of 54 study participants who had bipolar disorder.

Also, the new research found that more physical activity was associated with a shorter sleep duration that night, but more sleep correlated with less physical activity the following day.

As the authors explain, examining sleep, physical activity, mood, and energy all at the same time is highly important for people with bipolar disorder because both sleep and activity influenced the participants' psychological well-being.

According to Zipunnikov, "Systems regulating sleep, motor activity, and mood have typically been studied independently. This work," he goes on, "demonstrates the importance of examining these systems jointly rather than in isolation."

He adds that the study "exemplifies the potential for combining the use of physical activity trackers and electronic diaries to better understand the complex dynamic interrelationships among multiple systems in a real-time and real-life context."

Zipunnikov and colleagues conclude, "These findings suggest that interventions focused on motor activity and energy may have greater efficacy than current approaches that target depressed mood."