



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY

Friday

20190222

Dementia risk

Singing, gardening in middle age may lower dementia risk (The Tribune: 20190222)

<https://www.tribuneindia.com/news/health/singing-gardening-in-middle-age-may-lower-dementia-risk/732552.html>

Keeping physically and mentally active in middle age may lower the risk of developing dementia decades later, a study claims.

Mental activities included reading, playing instruments, singing in a choir, visiting concerts, and gardening, doing needlework or attending religious services, according to the study published in the journal *Neurology*.

"These results indicate that these activities in middle age may play a role in preventing dementia in old age and preserving cognitive health," said Jenna Najjar from the University of Gothenburg in Sweden.

"It's exciting as these are activities that people can incorporate into their lives pretty easily and without a lot of expense," Najjar said in a statement.

The study involved 800 Swedish women with an average age of 47 who were followed for 44 years. At the beginning of the study, participants were asked about their mental and physical activities.

Participants were given scores in each of the five areas based on how often they participated in mental activities, with a score of zero for no or low activity, one for moderate activity and two for high activity.

For example, moderate artistic activity was defined as attending a concert, play or art exhibit during the last six months, while high artistic activity was defined as more frequent visits, playing an instrument, singing in a choir or painting. The total score possible was 10.

Participants were divided into two groups. The low group, with 44 per cent of participants, had scores of zero to two and the high group, with 56 per cent of participants, had scores of three to 10.

For physical activity, participants were divided into two groups, active and inactive.

The active group ranged from light physical activity such as walking, gardening, bowling or biking for a minimum of four hours per week to regular intense exercise such as running or swimming several times a week or engaging in competitive sports.

A total of 17 per cent of the participants were in the inactive group and 82 per cent were in the active group.

During the study, 194 women developed dementia. Of those, 102 had Alzheimer's disease, 27 had vascular dementia and 41 had mixed dementia, where more than one type of dementia is present, such as the plaques and tangles of Alzheimer's disease along with the blood vessel changes seen in vascular dementia.

The study found that women with high level of mental activities were 46 per cent less likely to develop Alzheimer's disease and 34 per cent less likely to develop dementia overall than the women with the low level of mental activities.

The women who were physically active were 52 per cent less likely to develop dementia with cerebrovascular disease and 56 per cent less likely to develop mixed dementia than the women who were inactive.

The researchers took into account other factors that could affect the risk of dementia, such as high blood pressure, smoking and diabetes.

They also ran the results again after excluding women who developed dementia about halfway through the study to rule out the possibility that those women may have been in the prodromal stage of dementia, with less participation in the activities as an early symptom.

The results were similar, except that physical activity was then associated with a 34 per cent reduced risk of dementia overall.

Of the 438 women with the high level of mental activity 104 developed dementia compared to 90 of the 347 women with the low level of activity.

Of the 648 women with the high level of physical activity, 159 developed dementia, compared to 35 of the 137 women who were inactive. — PTI

Origami' paper device

Origami' paper device offers low-cost malaria diagnosis (The Tribune: 20190222)

<https://www.tribuneindia.com/news/health/-origami-paper-device-offers-low-cost-malaria-diagnosis/732539.html>

Scientists have developed a simple and affordable origami-style paper device that can accurately and quickly detect diseases such as malaria in the remote parts of the developing world.

A study, published in the journal *Proceedings of the National Academy of Sciences*, describes for the first time how folded wax paper, prepared with a printer and a hot plate, has helped detect malaria with 98 per cent sensitivity in infected participants from two primary schools in Uganda.

Malaria is one of the world's leading causes of illness and death, affecting more than 219 million people in 90 countries around the globe, and killing 435,000 people in 2017 alone, said researchers from the University of Glasgow in the UK and Shanghai Jiao Tong University in China.

A significant issue for arresting and reversing the spread of the disease is diagnosing it in people who are infected but who do not display any symptoms, a problem which can only be addressed by widespread field tests.

However, current tests, which rely on a process known as polymerase chain reaction (PCR), can only be carried out under laboratory conditions, making them unsuited for use in remote locations.

The team developed a new approach to diagnostics. It uses paper to prepare patient samples for a different type of detection process known as loop-mediated isothermal amplification, or LAMP, which is more portable and better-suited for use in the field.

The origami platform uses a commercially-available printer to coat the paper in patterns made from water-resistant wax, which is then melted on a hotplate, bonding the wax to the paper.

A blood sample taken from a patient via fingerprick is placed on in a channel in the wax then the paper is folded, directing the sample into a narrow channel and then three small chambers which the LAMP machine uses to test the samples' DNA for evidence of *Plasmodium falciparum*, the mosquito-borne parasitic species which causes malaria.

The test can be completed on-site in less than 50 minutes.

"We tested our approach with volunteers from two primary schools in the Mayuge and Apac districts in Uganda," said Professor Jonathan Cooper of the University of Glasgow.

"We took samples from 67 schoolchildren, under strict ethical approval, and ran diagnostic tests in the field using optical microscopy techniques, the gold standard method in these low-resource settings, a commercial rapid diagnostic procedure known as a lateral flow test and our LAMP approach.

"We also carried out PCR back in Glasgow, on samples collected in the field," he said.

The approach correctly diagnosed malaria in 98 per cent of the infected samples tested, markedly more sensitive than both the microscopy and lateral flow tests, which delivered 86 per cent and 83 per cent respectively, researchers said.

"It's a very encouraging result which suggests that our paper-based LAMP diagnostics could help deliver better, faster, more effective testing for malaria infections in areas which are currently underserved by available diagnostic techniques," they said.

"These are challenging environments for any test of this type, with no access to the kinds of refrigeration, special equipment and training that more traditional diagnostic procedures require, so it's very encouraging that the diagnostic techniques we have developed have proven to be so sensitive and reliable," said Julien Reboud of the University of Glasgow.

"With malaria infections on the increase in 13 affected countries according to a World Health Organisation report released last year, it's vital that new forms of diagnosis reach the people who need them, and we're committed to developing our approach to paper-based LAMP diagnostics further after this encouraging study," Reboud said. — PTI

Nuts

Nuts can keep diabetics' heart healthy (The Tribune: 20190222)

<https://www.tribuneindia.com/news/health/nuts-can-keep-diabetics-heart-healthy/731980.html>



Eating a handful of nuts daily, particularly tree nuts, may reduce the risk of cardiovascular disease among people with Type-2 diabetes, associated with an increased risk for high cholesterol, heart disease and stroke, say researchers, including one of Indian origin.

Tree nuts such as walnuts, almonds, Brazil nuts, cashews, pistachios, pecans, macadamias, hazelnuts and pine nuts were strongly associated with reduced risk of coronary events, cardiac death and total mortality compared with peanuts.

The results showed that eating even a small amount of nuts had an effect.

While the exact biological mechanisms of nuts on heart health are unclear, researchers noted that nuts appear to improve blood sugar control, blood pressure, metabolism of fats, inflammation and blood vessel wall function.

"Cardiovascular disease is the leading cause of death and a major cause of heart attacks, strokes and disability for people living with Type-2 diabetes," said Prakash Deedwania, Professor at the University of California-San Francisco.

"Efforts to understand the link between the two conditions are important to prevent cardiovascular complications of Type-2 diabetes and help people make informed choices about their health," Deedwania added.

In this study, reported in the Circulation Research journal, the team used data from 16,217 men and women before and after they were diagnosed with Type-2 diabetes.

People who increased their intake of nuts after being diagnosed with diabetes had an 11 per cent lower risk of cardiovascular disease, a 15 per cent lower risk of coronary heart disease, a 25 per cent lower risk of cardiovascular disease death, and a 27 per cent lower risk of all-cause premature death.

Each additional serving per week of total nuts was associated with a three per cent lower risk of heart disease and six per cent lower risk of heart disease death.

Adding more nuts to one's diets proved beneficial probably at any age or stage.

"It seems never too late to improve diet and lifestyle after diagnosis among individuals with Type-2 diabetes," the researchers said. — IANS

Gene therapy

World's first gene therapy to halt most common cause of blindness' (The Tribune: 20190222)

<https://www.tribuneindia.com/news/health/-world-s-first-gene-therapy-to-halt-most-common-cause-of-blindness/731517.html>

LONDON: Oxford researchers claim to have carried out the world's first gene therapy operation to halt age-related macular degeneration (AMD), the leading cause of untreatable blindness in the developed world.

Dry AMD is a slow deterioration of the cells of the macula. It affects the central part of a patient's vision with gaps or 'smudges', making everyday activities like reading and recognising faces difficult.

If successful, the treatment could have a beneficial impact of patients' quality of life and their ability to remain independent.

“A genetic treatment administered early on to preserve the vision in patients who would otherwise lose their sight would be a tremendous breakthrough and certainly something I hope to see in the near future,” said Robert MacLaren, Professor at the University of Oxford in the UK.

The first person to undergo the procedure was Janet Osborne of Oxford, said MacLaren, who carried out the procedure at the John Radcliffe Hospital in the UK.

Like many people with AMD, Osborne has the condition in both eyes, but it is more advanced in her left eye. As is typical with this condition, the central vision in her left eye has deteriorated and is very hazy, although her peripheral vision is better.

The 80-year-old said that her restricted vision makes household tasks like preparing vegetables and sewing difficult, and she cannot read for very long. She finds it hard to recognise faces.

Osborne said her motivation for taking part in the trial was the possibility of helping others with AMD.

“I wasn’t thinking of me. I was thinking of other people. For me, I hope my sight doesn’t get any worse. That would be fantastic. It means I wouldn’t be such a nuisance to my family,” she said.

The operation involves detaching the retina and injecting a solution containing a virus underneath.

The virus contains a modified DNA sequence, which infects cells, called the retinal pigment epithelium (RPE), and corrects a genetic defect that causes AMD.

Ideally if successful, gene therapy would only need to be performed once, as the effects are thought to be long-lasting.

A key factor in AMD is the complement system, a system of proteins in our immune system that fights bacteria.

In macular degeneration, these proteins are over-active and start to attack the retinal cells, in a similar way to how they would attack bacteria.

“We are harnessing the power of the virus, a naturally occurring organism, to deliver the DNA into the patient’s cells,” MacLaren said.

“When the virus opens up inside the retinal cell it releases the DNA of the gene we have cloned, and the cell starts making a protein that we think can modify the disease, correcting the imbalance of the inflammation caused by the complement system,” he said.

“The idea of this gene therapy is to ‘deactivate’ the complement system, but at a very specific point at the back of the eye, so the patient would otherwise be unaffected by it, and we hope that in future it will slow down the progression of macular degeneration,” said MacLaren.

“We have a better understanding now on the relationship between the complement system and the AMD disease which lead us to the discovery that restoring the balance of a hyperactive complement system could be a potential therapeutic approach in dry AMD,” said Peter Lachman, the scientist from the University of Cambridge.

The aim of the therapy is to halt the progress of the condition and preserve what vision patients have remaining.

If successful, it is hoped that gene therapy can be used in the future on patients with early AMD and so halt the disease before their vision has started to deteriorate. PTI

WHO prescribes

WHO prescribes 'aerobics 150' to stay fit (The Hindu: 20190222)

<https://www.thehindu.com/sci-tech/health/who-prescribes-aerobics-150-to-stay-fit/article26334037.ece>



Inactivity in many countries is rising, posing higher risk of non-communicable diseases

Reiterating the need for physical activity to reduce the incidence of non-communicable diseases (NCD), the World Health Organisation (WHO) has prescribed 150 minutes of weekly physical activity. It stated that physical inactivity is now identified as the fourth leading risk factor for global mortality.

The WHO warned that physical inactivity levels are rising in many countries with major implications for the prevalence of non-communicable diseases (NCDs) and the general health of the population worldwide.

Physical inactivity is estimated to be the main cause for approximately 21%-25% of breast and colon cancers, 27% of diabetes and approximately 30% of ischaemic heart disease burden.

“Regular and adequate levels of physical activity in adults reduces the risk of hypertension, coronary heart disease, stroke, diabetes, breast and colon cancer, depression and the risk of falls; improve bone and functional health; and are a key determinant of energy expenditure, and thus fundamental to energy balance and weight control,” noted the WHO.

It said that, overall, there is strong evidence to demonstrate that adults between the ages of 18 to 64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.

“Aerobic activity should be performed in bouts of at least 10 minutes duration.

For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Muscle-strengthening activities should be done involving major muscle groups on two or more days a week,” it said.

Children and youth aged 5-17 years should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily. Amounts of physical activity greater than 60 minutes provide additional health benefits. Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone at least three times per week. For this age group, bone-loading activities can be performed as part of playing games, the Organisation recommends.

Psychological benefits

Doctors explain that physical activity has also been associated with psychological benefits in young people by improving their control over symptoms of anxiety and depression.

The WHO noted that physical activity provides young people opportunities for self-expression, building self-confidence, social interaction and integration.

Physically active young people more readily adopt other healthy behaviours (for example, avoidance of tobacco, alcohol and drug use), and demonstrate higher academic performance at school.

Pacemakers

Now, pacemakers that are powered by heartbeats (The Times of India: 20190222)

<https://timesofindia.indiatimes.com/home/science/now-pacemakers-that-are-powered-by-heartbeats/articleshow/68106809.cms>

Scientists have developed pacemakers that can be powered by the energy of heartbeats, and successfully tested the device in pigs.

The study, published in the journal ‘ACS Nano’, is a step towards making a self-powered cardiac pacemaker, researchers said. Implantable pacemakers have altered modern medicine, saving countless lives by regulating heart rhythm. However, one serious shortcoming is that their batteries last only five to 12 years, at which point they have to be replaced surgically, researcher said.

Researchers from Second Military Medical University and Shanghai Jiao Tong University in China worked on overcoming this problem. A conventional pacemaker is implanted just under the skin near the collarbone.

Its battery and circuitry generate electrical signals that are delivered to the heart via implanted electrodes.

Since surgery to replace the battery can lead to complications, researchers have tried to build pacemakers that use the natural energy of heartbeats as an alternative energy source.

However, these experimental devices are not powerful enough because of their rigid structure, difficulties with miniaturisation and other drawbacks.

The team, designed a small, flexible plastic frame which was bonded to piezoelectric layers. These generate energy when bent.

They implanted the device in pigs and showed that a beating heart could in fact alter

Alcoholism

Telling Numbers: 1 in 7 Indians is an alcohol user, prevalence high in Chhattisgarh (The Indian Express: 20190222)

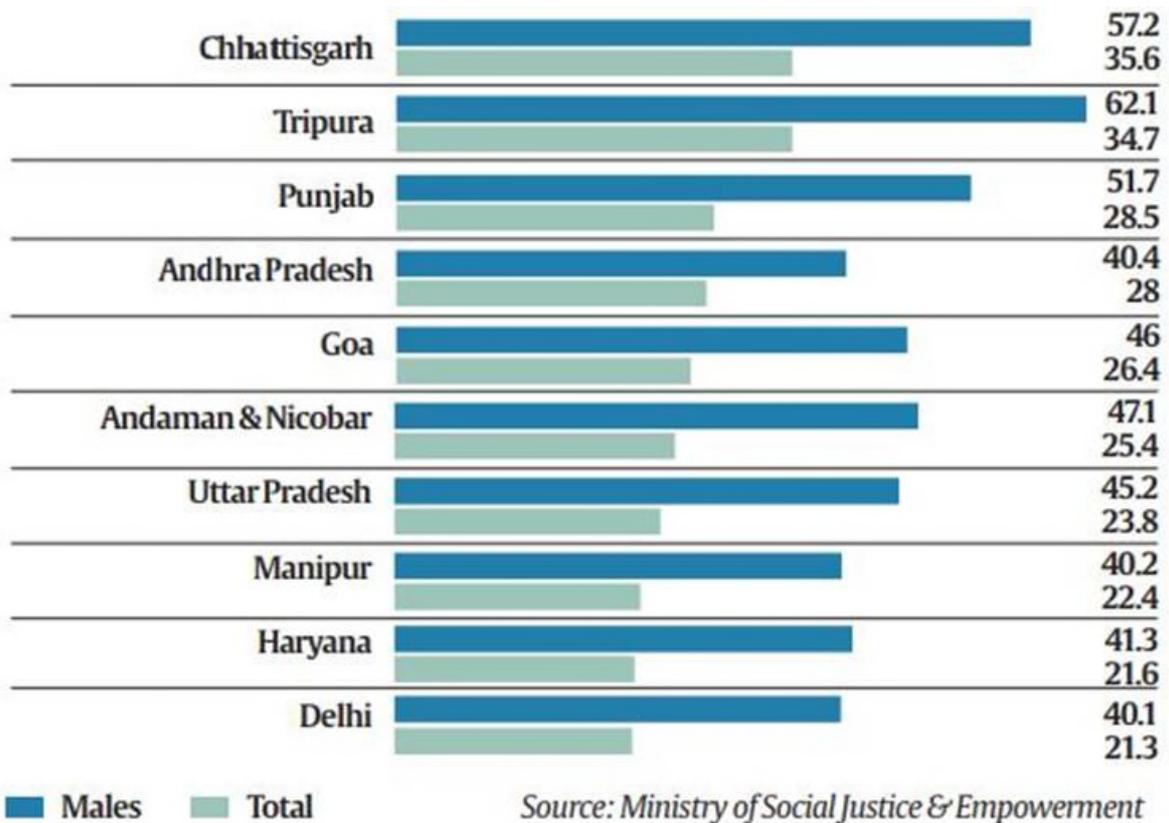
<https://indianexpress.com/article/explained/telling-numbers-1-in-7-indians-is-an-alcohol-user-prevalence-high-in-chhattisgarh-5595477/>

As such, the prevalence was several times higher among men (27.3%) than among women (1.6%). Also, 1.3% of children (ages 10-17) are alcohol users, as opposed to 17.1% in the 18-plus age group.

The report notes that there is considerable heterogeneity in prevalence of alcohol use in the country.

One in seven Indians is an alcohol user, according to a report released by the Ministry of Social Justice & Empowerment, and other findings of which were reported in The Indian Express on February 19.

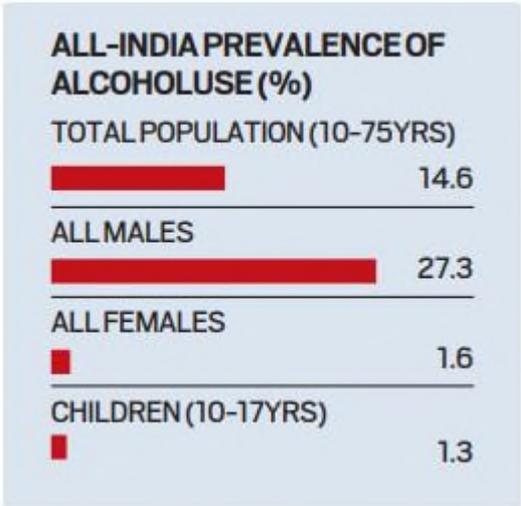
‘Magnitude of Substance Use in India, 2019’, a report prepared by National Drug Dependence Treatment Centre, AIIMS-New Delhi, cited the prevalence of current alcohol use as 14.6% among the total population in the age group 10-75.



An overwhelming majority of alcohol users are males and fall in the age bracket 18-49 years (74%).

As such, the prevalence was several times higher among men (27.3%) than among women (1.6%). Also, 1.3% of children (ages 10-17) are alcohol users, as opposed to 17.1% in the 18-plus age group.

The report notes that there is considerable heterogeneity in prevalence of alcohol use in the country.



Mosquitoes (The Asian Age: 20190222)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12492896>

GENETICALLY MODIFIED
MOSQUITOES RELEASED

SCIENTISTS ARE TESTING a new controversial organism in a high security lab

THE MOSQUITO is designed to quickly spread a genetic mutation lethal to its own species

IT IS FOR THE FIRST TIME researchers have released the engineered insects on a large scale

THE EXPERIMENTS are being conducted in a high-security laboratory in Terni, Italy.

THE GOAL IS to see if mosquitoes can provide a powerful new weapon to help eradicate malaria in Africa

This will really be a break-through experiment. It's a historic moment

— RUTH MUELLER, Entomologist who runs the lab



Tumours ((The Asian Age: 20190222)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12494119>

New AI software can help early detection of deadly tumours

Despite advancement in medicine, detection of tumours continues to be challenging with a wide life-threatening gap between diagnosis and curability.

As science and technology increasingly blur their boundaries, a San Francisco based company called *Arterys* has received an FDA clearance to market a first-of-its-kind, AI as-a-service software to help doctors detect, measure, and track tumours and lesions in CT scans of lungs and in MRI and CT scans of the liver, *Fast Company* reported. The software builds upon another artificially intelligent platform called *Cardio AI* that automates image-analysis tasks which radiologists currently execute manually. By automating, the evalu-

US-based company has received an FDA clearance to market a first-of-its-kind, AI as-a-service software to help doctors detect, measure, and track tumours

ation time is cut down to from 30 minutes to a mere 15 seconds. *Arterys* software for lungs and liver is expected to bring the same level of efficiency in analysing scans. The company is also looking at including breast scan compatibility to the software. The clearance, received last February, is now allowing the software to be used in nearly 100 countries. It is currently used in 100 hospitals worldwide. Does it mean no human intervention when it comes to diagnosis? CEO Mr Fabien Beckers stresses

NEW SENSERS TO IDENTIFY FERTILITY ISSUES QUICKLY

Scientists have developed a new robotic sensor technology that can be used to measure hormones, which affect fertility, sexual development and menstruation swifter and cheaply than current methods.

The technology, explained in the journal *Nature Communications*, was tested in patients at Hammersmith Hospital in the UK.

Doctors usually diagnose severe reproductive issues such as infertility and early menopause by carrying out a blood test

to measure the amount of luteinising hormone (LH) in the sample, said researchers at Imperial College London in the UK and The University of Hong Kong.

Current blood tests cannot easily measure rise and fall of LH levels which is vital for normal fertility - so-called LH pulse patterns linked to reproductive disorders.

It is not currently feasible to measure LH pulse patterns in a clinical setting as doctors take blood sample from patients every 10 minutes for at least 8 hours. — *PTI*

that the purpose of the software is to provide human radiologists with

more information to make a more accurate diagnosis swiftly. — *ANI*

Back pain

Here's a better way to diagnose the cause of back pain (New Kerala: 20190222)

<https://www.newkerala.com/news/read/104739/heres-a-better-way-to-diagnose-the-cause-of-back-pain.html>

It is common for most doctors to advise imaging tests like MRI or X-ray to determine the cause of back pain. These are useful if the problem is due to a structural issue in the spine. But,

most back pain cases are mechanical in nature. In such cases, imaging tests like MRI & X-rays fail to show the complete picture.

MRI and X-ray images cannot distinguish between subtypes of back pain and chronic issues. MRI findings do not match with intensity of pain and disability in case of discogenic back pain.

Interpretive errors by radiologists make these reports extremely subjective which, can directly impact the diagnosis, treatment and clinical outcomes. These are only a few of the many shortcomings of referring to imaging tests as the primary mode of diagnosis.

The good news is that researchers from Germany have made advances in developing very accurate spine function tests which are now being used extensively by leading physicians and orthopaedics.

New technological advances in back pain diagnosis has helped us jointly build a path to non-surgical treatment of back and neck pain. This can help us approach the problem with a more holistic view. This is certainly changing the face of back pain treatment in India, shared Dr Gautam Shetty, a senior orthopaedic surgeon from Mumbai.

One of the most common causes of back pain is mechanical back pain, which is caused by weak musculature and cannot be seen in an X-ray or MRI. These are standard imaging tests, which focus on studying the structure of the spine. They do not adequately diagnose the condition of degenerated tissues. This is why, most back pain cases are classified as 'non-specific' by the doctors.

These tests study the patient's condition in a static position. But, patients often experience pain when they perform a certain task like - bending, walking or sitting. This is why many doctors recommend a spine function test to show a more complete picture. A spine function test can help identify the weak areas of the musculature and help doctors develop a more targeted treatment plan. It has helped us prevent many unwarranted surgeries, Dr. Garima Anandani, Clinical Director, QI Spine Clinic said.

The most common form of back pain comes from mechanical wear and tear of the support tissues of the spine. A spine function test can individualise your problem and help develop a need-based rehabilitation programme. This seems to be the future of back pain cure, concluded Dr Abhay Nene, an eminent spine surgeon.

Notably, a spine function test can reveal weaknesses in the patient's spine and isolate the affected area and the movements, which cause the pain. This enables doctors to focus on the affected area with targeted treatment.

The Digital Spine Analysis (DSA) is a gold standard in spine function testing and is accepted by doctors worldwide. It is more accurate because it performs a functional analysis of the spine. The mechanical structure of the back is monitored on different motion sensitive devices across parameters like - strength, mobility, and balance, to identify the muscle groups which are causing pain. This helps the spine specialists prescribe a tailor-made spine rehabilitation programme can even prevent surgery in some cases.

Obesity

Obesity can lower testosterone in men, says study (New Kerala: 20190222)

<https://www.newkerala.com/news/read/104622/obesity-can-lower-testosterone-in-men-says-study.html>

Obesity is no doubt a major health challenge worldwide. Being overweight brings plethora of health issues such as heart diseases, diabetes, hypertension, stroke, osteoarthritis and some cancers like colon and breast.

Not only these, but obesity highly affects one's sex life too. One is considered to be obese when you weigh more than 20 per cent above of your ideal weight. A study conducted at University at Buffalo, New York says that obesity is associated with another health problem, that affects men only is low testosterone levels.

How obesity can affect sex life?

Dr. Shobha Gupta, Medical Director and an IVF Specialist from Mother's Lap IVF Centre explained, Being overweight hinders stamina which is important to sustain sexual performance. It also disturbs one's hormonal balance which in turn affects testosterone levels, causing loss of libido or low sex drive. Obesity also affects blood flow to the genitals and lack of blood circulation there causes erectile dysfunction.

Notably, testosterone is actually an important male hormone which helps in development of male sexual organs and builds strong bones. Testosterone levels begin to rise at puberty and peak in early adulthood and then start declining with age.

Furthermore, excess fat in the inner thighs and pubic region results in high testes temperatures of over 35°C. This may be sufficient to hinder sperm production. Obesity is definitely linked to low sperm count and reduced sperm motility which can be a cause of infertility.

In other words, we can say that if you have low sperm count and you are unable to make your wife pregnant despite trying of one year or more then you have infertility, said Dr. Shweta Goswami, Sr. Consultant Gynecologist and IVF Expert from Jaypee Hospital, Noida.

Obesity may also take an emotional toll in one's life. Some may experience feelings of social isolation, depression, discrimination over weight etc. Disrupted sleep-wake cycles, unhealthy eating habits, ease to junk or packed food, no physical activity can badly affect the fertility.

Here's how one may choose a healthy life over wealthy life:

- Make healthy lifestyle a family goal by keeping the calorie needs in mind.
- Try to be active all the time, take a walk, and use stairs over lift or escalator.
- Limit your screen time; instead play outdoor, indulge more in outdoor activities.

track of weight, BMI and weight circumference.

-Take a proper balanced diet; have fertility enhancing foods such as banana, broccoli, walnuts, garlic, ginseng, red meat, beans, eggs, fish, citrus fruits like oranges, kiwi, strawberries, tomatoes, cheese etc.

-Go for a proper health check up once in six months.

Medicinal plant Yerba

Medicinal plant Yerba santa may hold promise for treating Alzheimer's (New Kerala: 20190222)

<https://www.newkerala.com/news/read/104616/medicinal-plant-yerba-santa-may-hold-promise-for-treating-alzheimers.html>

A new discovery that found neuroprotective and anti-inflammatory chemical in a native California shrub may lead to a treatment for Alzheimer's disease based on a compound found in nature. The research appeared in the journal Redox Biology.

Speaking about it, study author Pamela Maher said, Alzheimer's disease is a leading cause of death in the United States, adding, And because age is a major risk factor, researchers are looking at ways to counter aging's effects on the brain. Our identification of sterubin as a potent neuroprotective component of a native California plant called Yerba santa (*Eriodictyon californicum*) is a promising step in that direction.

Native California tribes, which dubbed the plant holy herb in Spanish, have long used Yerba santa for its medicinal properties. Devotees brew its leaves to treat respiratory ailments, fever and headaches; and mash it into a poultice for wounds, sore muscles and rheumatism.

The researchers applied a screening technique used in drug discovery to a commercial library of 400 plant extracts with known pharmacological properties.

Through the screen, the lab identified a molecule called sterubin. The researchers tested sterubin and other plant extracts for their impact on energy depletion in mouse nerve cells, as well as other age-associated neurotoxicity and survival pathways directly related to the reduced energy metabolism, accumulation of misfolded, aggregated proteins and inflammation seen in Alzheimer's.

They found that Sterubin had a potent anti-inflammatory impact on brain cells known as microglia. It was also an effective iron remover--potentially beneficial because iron can contribute to nerve cell damage in aging and neurodegenerative diseases. Overall, the compound was effective against multiple inducers of cell death in the nerve cells, according to Maher.

Speaking about it, Maher said, This is a compound that was known but ignored, adding, Not only did sterubin turn out to be much more active than the other flavonoids in Yerba santa in our assays, it appears as good as, if not better than, other flavonoids we have studied.

Next, the lab plans to test sterubin in an animal model of Alzheimer's, then determine its drug-like characteristics and toxicity levels in animals.

Tobacco

Here's how genes affect tobacco and alcohol use (New Kerala: 20190222)

<https://www.newkerala.com/news/read/104590/heres-how-genes-affect-tobacco-and-alcohol-use.html>

A recent study now has discovered several genes associated with an increased use of alcohol and tobacco.

Notably, the use of alcohol and tobacco is closely linked to several diseases, and is a contributing factor in many deaths.

The study, published in the journal Nature Genetics saw involvement of several research groups around the world, including a group from the Nord-Trondelag Health Study (HUNT) and the K.G. Jebsen Center for Genetic Epidemiology.

Speaking about it, co author Professor Kristian Hveem, We discovered several genes associated with an increased use of alcohol and tobacco. We also looked at the correlation between these genes and the risk of developing various diseases and disorders.

The research groups discovered a total of 566 gene variants at 406 different sites in the human genetic material that can be linked to the use of alcohol or tobacco. One hundred fifty of these sites are linked to the use of both tobacco and alcohol.

Alcohol consumption was measured in terms of the number of standard alcohol units. Tobacco use was measured in the number of cigarettes per day.

Hveem said, The study group that was genetically predisposed to smoking was also genetically predisposed to a number of health problems, including obesity, diabetes, ADHD and various mental illnesses, whereas a genetic risk for alcohol was associated with lower disease risk. This does not imply that consuming more alcohol improves health, but indicates a mechanistic complexity that needs to be investigated further.

The experts reported evidence for the involvement of many natural signalling agents in tobacco and alcohol use, including genes involved in nicotinic, dopaminergic, and glutamatergic neurotransmission which to some extent may provide a biological explanation for why we seek artificial stimuli.

The data that was collected came from a number of studies and included different age categories, societies with different attitudes to the use of drugs and different patterns of alcohol and nicotine use.

However, results showed that the correlation between genetic risk and the development of different disease categories varied little between the population groups.

The research gives new insight into the complexity of genetic and environmental factors that compel some of us to drink and smoke more than others. It is also interesting to note that some of these genes linked to increased use of alcohol, reduce the risk for some diseases.

New AI software

New AI software can help in early detection of deadly tumours (New Kerala: 20190222)

<https://www.newkerala.com/news/read/104408/new-ai-software-can-help-in-early-detection-of-deadly-tumours.html>

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The clearance, received last February, is now allowing the software to be used in nearly 100 countries. It is currently used in 100 hospitals worldwide.

Does it mean no human intervention when it comes to diagnosis? CEO Fabien Beckers stresses that the purpose of the software is to provide human radiologists with more information to make a more accurate diagnosis in lesser time.

Mental Disorder (Navbharat Times: 20190222)

<http://epaper.navbharattimes.com/details/17855-50908-1.html>

इलाज मनोरोग का, लौट आई आंखों की रोशनी



■ अनिर्बान घोष (एई समय)

मानसिक बीमारी से आंखों की रोशनी चली जाएगी, कौन जानता था! जानना-समझना तो दूर, परिवार का कोई सदस्य इस बारे में सोच भी नहीं सकता था। यहां तक कि आंखों के डॉक्टरों को भी यह अहसास नहीं था। लेकिन कोलकाता की सारिका बीबी को अंत में जब मनोरोग विशेषज्ञ के पास ले जाया गया। छह महीने के इलाज के बाद उन्हें फायदा होने लगा। उनकी आंखों की रोशनी लौटने लगी। इसका साक्ष्य बना कोलकाता का इंस्टिट्यूट ऑफ सायकायट्री हॉस्पिटल (आईओपी)। डॉक्टरों का कहना है कि यह जटिल बीमारी है, लेकिन इसका इलाज असंभव नहीं। सारिका के पति नजरूल इस्लाम ने बताया कि 2015 में यह घटना हुई थी। तब किसी ने मनोरोग विशेषज्ञ को दिखाने की सलाह दी।

यह कैसे मुमकिन हुआ

छह महीने पहले डिप्रेशन का इलाज शुरू करते समय आईओपी के मनोरोग विशेषज्ञ ने बीमारी की वजह भांप ली थी। अस्पताल के डायरेक्टर डॉक्टर प्रदीप कुमार साहा ने बताया, सारिका की दृष्टिहीनता का कारण आंख और तंत्रिका की समस्या ही नहीं है। यह न्यूरो-सायकायट्रिक समस्या है। यह समझते हमें देर नहीं लगी। मेडिकल टेस्ट के बाद हमने इलाज पर फोकस किया। लगभग डेढ़ साल से सारिका का नियमित इलाज चल रहा है। उन्होंने अपनी दूसरी संतान को जन्म भी दिया है। दवाई से बेचैनी और डिप्रेशन से उबर गई हैं। रोशनी लौट आई है।

Colosteriol (Hindustan: 20190222)

http://epaper.livehindustan.com/imageview_115250_61321340_4_1_22-02-2019_i_13.pagezoomsinwindows.php

जब बढ़ने लगता है
कोलेस्ट्रॉल!

आप क्या मोटापे के शिकार हैं? उच्च रक्तचाप रहता है? ज्यादातर तनाव में रहते हैं? कमर का घेरा बढ़ता जा रहा है? अगर ऐसा है तो सावधान हो जाइए, यह कोलेस्ट्रॉल बढ़ने का संकेत हो सकता है। कोलेस्ट्रॉल का ज्यादा बढ़ना हृदय रोगों का कारण तो बनता ही है, यह आंखों की रेशमों को स्थायी नुकसान पहुंचा सकता है।

कोलेस्ट्रॉल को जानें

कोलेस्ट्रॉल वसा या नरम जैसा पदार्थ होता है, जो शरीर की हर कोशिका में मौजूद होता है। यह तैलीय होता है, पानी में घुलता नहीं और लिपोप्रोटीन कणों के रूप में रक्तप्रवाह के जरिये दूसरे अंगों तक पहुंचता है।



कोलेस्ट्रॉल शरीर के लिए जरूरी तत्व है। यह कई हार्मोनों को नियंत्रित करता है, कोशिकाओं की दीवारों और विटामिन-डी के निर्माण में मदद करता है। कुछ तरह के विटामिनों के मेटाबॉलिज्म में भी कोलेस्ट्रॉल की भूमिका होती है। असली फीसदी कोलेस्ट्रॉल लिपिड के जरिये शरीर खुद बनाता है और बस फीसदी भोजन के जरिये शरीर में पहुंचता है। दो तरह के कोलेस्ट्रॉल में से कम घनत्व वाले लिपोप्रोटीन (एलडीएल) को खराब तथा उच्च घनत्व वाले लिपोप्रोटीन (एचडीएल) को अच्छा कोलेस्ट्रॉल माना जाता है।

वया है खतरा

कोलेस्ट्रॉल बढ़ने का सामान्य अर्थ है एलडीएल का बढ़ना, जबकि एचडीएल का बढ़ना सेहत के लिए अच्छा माना जाता है। कोलेस्ट्रॉल बढ़ने से ये समस्याएं हो सकती हैं...

- बड़ा हुआ कोलेस्ट्रॉल धमनियों में जमा होकर उन्हें संकर

योग-व्यायाम जरूर करें

कोलेस्ट्रॉल को नियंत्रित रखने के लिए डॉक्टर सबसे पहले शारीरिक स्थिति को देखकर योग-व्यायाम की ही सलाह देते हैं। चक्रासन, शतभासन, सर्वांगसन, पश्चिमोत्तानासन, अर्धमत्स्येन्द्रासन विशेष लाभदायक हैं। साथ में कपालभाति, अनुलोम-विलोम तथा नाडीशोधन प्राणायाम जरूर करना चाहिए। हल्के स्ट्रेचिंग व्यायाम, एरोबिक एक्सरसाइज का नियमित अभ्यास कोलेस्ट्रॉल समस्या में राहत देता है।



कर देता है। इससे रक्तसंचार ठीक से नहीं हो पाता, जो हार्ट अटैक का कारण बनता है। इससे मस्तिष्क की कार्यक्षमता पर असर पड़ सकता है और ब्रेन स्ट्रोक, तनाव आदि की आशंकाएं बढ़ जाती हैं।

- कैल्शियम युनिवर्सिटी में हुए शोध के अनुसार युवावस्था में कोलेस्ट्रॉल नियंत्रित रहे तो बुढ़ापे में अल्जाइमर की आशंका कम रहती है।
- कोलेस्ट्रॉल बढ़ने से आंखों तक रक्त देग से नहीं पहुंच पाता, जो आंखों पर बुरा असर डालता है।
- कोलेस्ट्रॉल बढ़ना किडनी पर भी बुरा असर डालता है। सोने में दर्द रहने या एंजाइना की समस्या हो सकती है।
- कोलेस्ट्रॉल बढ़ने पर पेफिरेल नसों में ऑक्सीजन व पोषक तत्वों से युक्त रक्त नहीं पहुंच पाता। इससे हाथ-पैर में सिहरन व अकारण दर्द महसूस होता है।
- गर्दन और कंधे में सूजन और दर्द रहता है।
- थोड़ा भी चलने-फिरने पर थकान, सांस फूलना या दिल की धड़कन तेज होने की समस्या होने लगती है। वजन तेजी से बढ़ने लगता है। ज्यादा पसीना आता है।

- आंखों के संकेत भाग या कॉर्निया पर ग्रे रंग का छल्ला दिखाई देने लगता है। इससे खास दिक्कत नहीं होती, पर यह कोलेस्ट्रॉल बढ़ने का संकेत समझना चाहिए।

वया कतने है टेस्ट

खून में एलडीएल, एचडीएल और ट्राइग्लिसराइड को मापने के लिए लिपिड प्रोफाइल या कोलेस्ट्रॉल टेस्ट किया जाता है। इससे रक्त के एक डेसीलीटर में कोलेस्ट्रॉल के स्तर का पता चलता है। कोलेस्ट्रॉल का स्तर सामान्य से ज्यादा आने पर हृदय रोग, स्ट्रोक, एथेरोस्लेरोसिस की आशंका बढ़ी हुई मानी जाती है। ऐसे में थाइराइड व डायबिटीज के टेस्ट की जरूरत पड़ सकती है। एक वयस्क व्यक्ति में कोलेस्ट्रॉल का सामान्य स्तर 200 मिलीग्राम/डीएल से कम हो तो इसे बेहतर स्थिति माना जाता है। 200 से 239 मिलीग्राम/डीएल के बीच होना खतरा की निशानी है। 240 मिलीग्राम/डीएल या इससे ऊपर की स्थिति कोलेस्ट्रॉल के स्पष्ट रूप से ज्यादा बढ़ जाने का संकेत है। एलडीएल 100 मिलीग्राम/डीएल से कम हो तो आदर्श है। 129 मिलीग्राम/डीएल तक भी आमतौर पर परेशानी का कारण नहीं बनता, पर इससे ज्यादा बढ़ना सही नहीं है। एलडीएल को 190 मिलीग्राम/डीएल से ज्यादा नहीं होने देना चाहिए। एचडीएल का स्तर 40-60 मिलीग्राम/डीएल तक या इससे अधिक हो तो बेहतर माना जाता है। यह 40 मिलीग्राम/डीएल से नीचे हो जाए तो हृदय रोगों की आशंका बढ़ जाती है। ट्राइग्लिसराइड का स्तर 150 मिलीग्राम/डीएल से कम ही बेहतर माना जाता है।

ताकि काबू में रहे कोलेस्ट्रॉल

- 30 या इससे अधिक बाईमिआस इंडेक्स होने पर कोलेस्ट्रॉल बढ़ने का खतरा हो सकता है, इसलिए वजन पर नियंत्रण रखें।
- संतुल्य वसा का सेवन कम-से-कम करें। इस तरह की वसा से मिलने वाली कैलरी 7 फीसदी और कोलेस्ट्रॉल 200 मिलीग्राम से कम होने चाहिए। वनस्पति तेलों जैसे सूरजमुखी, जैतून, सोयाबीन वगैरह के तेल बेहतर हैं।
- धूम्रपान से बचें। यह धमनियों की दीवारों को नुकसान पहुंचाता है, जिससे कोलेस्ट्रॉल जमा होने की आशंका बढ़ती है।
- फाइटोस्टेरॉल आहार खारें। एक शोध के अनुसार आहार में फाइटोस्टेरॉल का मात्रा कम हो तो सिर्फ छह दिन में ही

ट्राइग्लिसराइड 45 फीसदी तक बढ़ जाता है।

- सूखे मेवों का सेवन करें। कई शोधों के 3 मेषीदाना, लहसुन और हल्दी का नियमित कोलेस्ट्रॉल को काबू में रखने में मदद करता है
- ताजे फल और सब्जियों को आहार में भरपूर जोड़ें कोलेस्ट्रॉल वाले खाद्य पदार्थ हैं। बैंगन, शलजम और शककराकंद विशेष फायदेमंद हैं।
- संतरे का रस और नाशपाती कोलेस्ट्रॉल को नियंत्रित करने में मदद करते हैं। आंवले में मौजूद विटामिन कोलेस्ट्रॉल को खून की नलियों में तरल बनाए है और जमा नहीं होने देता।
- शोध के अनुसार तीन महीने तक नाश्ते में ओट्स से कोलेस्ट्रॉल का स्तर 5.3 फीसदी कम हो जा
- विटामिन-बी और विटामिन-ई शरीर में एचडीएल अच्छे कोलेस्ट्रॉल के स्तर को बढ़ाते हैं।

चौकोनाले शोध

करीब तीन साल पहले अमेरिका में एक नई 3 गाइडलाइन जारी की, जिसके मुताबिक सैचुरेटेड फैट खाद्य पदार्थ जैसे अंडा, चीज, चावल, आलू, फास्ता, सैंडविच और बर्गर आदि दिल के लिए उतने हैं, जितने मारे जाते रहे हैं। चार दशक तक कोलेस्ट्रॉल प्रति जागरूकता अभियान चलाने के बाद अमेरिक डिपार्टमेंट ने बयान जारी किया कि खून में कोलेस्ट्रॉल को खाने-पाने से कोई संबंध नहीं है और न ही अच्छा कोलेस्ट्रॉल होता है और न ही बुरा। अरबल में युनिवर्सिटी के एक शोध का नतीजा यह था कि सै फेट का सेवन करने वाले और न करने वाले, दोनों के लोगों की हृदय संबंधी परेशानियां एक जैसी होती थीं कि खाने में शामिल कोलेस्ट्रॉल और खून में मिल कोलेस्ट्रॉल के बीच कोई सीधा संबंध नहीं होता। एच शोध में दुनिया के 17 हृदय रोग विशेषज्ञों की टीम किया है कि बैड कोलेस्ट्रॉल के उच्च स्तर से बीमार हैं, इस बात के पुख्ता प्रमाण नहीं हैं। इस शोध के मुह बड़ी संख्या में ऐसे हृदयरोगी भी हैं, जिनके अंदर एल की मात्रा सामान्य स्तर से भी कम है।

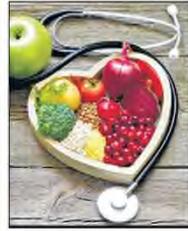
हृदय रोग विशेषज्ञों का मानना है कि इस शोध का इतना ही मतलब समझना चाहिए कि कोलेस्ट्रॉल के जो लोग बहुत धयाभीत हो उठते हैं या वसा को दुश्मन लगते थे, उन्हें उतना डरने की जरूरत नहीं है। कोलेस्ट्रॉल का बढ़ना शरीर के लिए हानिकर ही उसका स्तर नीचे ही होना चाहिए। यह इसलिए भी है, क्योंकि यह हृदय के अलावा शरीर के दूसरे अंगों असर डालता है। डॉक्टरों के मुताबिक यह खाने-पी कोलेस्ट्रॉल बढ़ने के बीच संबंधों पर प्राथमिक शोध है प्राथमिक निष्कर्ष से एकदम से असावधान हो जाना नहीं है। समय-समय पर जांच करवाना, सही उप खान-पान का ध्यान रखना जरूरी है।

हमारे विशेषज्ञ: डॉ. सत्य शर्मा, हृदय रोग विशेषज्ञ, जलदपुर, नई दिल्ली डॉ. इरिमा सिंह, जलदपुर, अंडर डॉ. ब्रजभूषण शर्मा, प्राकृतिक चिकित्सक, शहीनोददौलत, नई दिल्ली

वयों बढ़ता है कोलेस्ट्रॉल

- सेबुरेड फेट, ट्रांस फेट और कोलेस्ट्रॉल वाली चीजें ज्यादा खाना। मसलन, मांस, मक्खन, दूध घी, फीर, अंडे, केक आदि।
- 20 की आयु के बाद कोलेस्ट्रॉल का स्तर स्वी-पुरुष में औसतन एक जैसा बढ़ता है, पर स्त्रीजिनिति के बाद महिलाओं पर इसका असर ज्यादा देखने को मिलता है।
- वजन बढ़ने पर ट्राइग्लिसराइड बढ़ने लगता है, जो कोलेस्ट्रॉल बढ़ाता है।
- थाइराइड, किडनी और कुछ लिवर के रोग भी कोलेस्ट्रॉल बढ़ाते हैं।
- अनुवैशिक कारण व धूम्रपान करना
- दवाओं का असर बीटा-ब्लॉकर, परडोजन, ड्यूस्टिक्स तथा कॉर्टीकोस्टेरॉयड का अधिक सेवन भी कोलेस्ट्रॉल का कारण बन सकता है।

डॉक्टर की सलाह



कोलेस्ट्रॉल का स्तर पताने के लिए आमतौर पर स्टैटिन ग्रुप, एक्सटार, एरिथिफेप, एरिसिल, एवने, एवनेडील, एक्स्टीप जैसी दवाएं दी जाती हैं। किसी भी तरह की दवाएं डॉक्टर की सलाह से ही लेनी चाहिए। एक शोध के अनुसार कुछ स्टैटिन दवाएं दिमाग में जरूरी कोलेस्ट्रॉल के उत्पादन पर भी असर डाल सकती हैं।

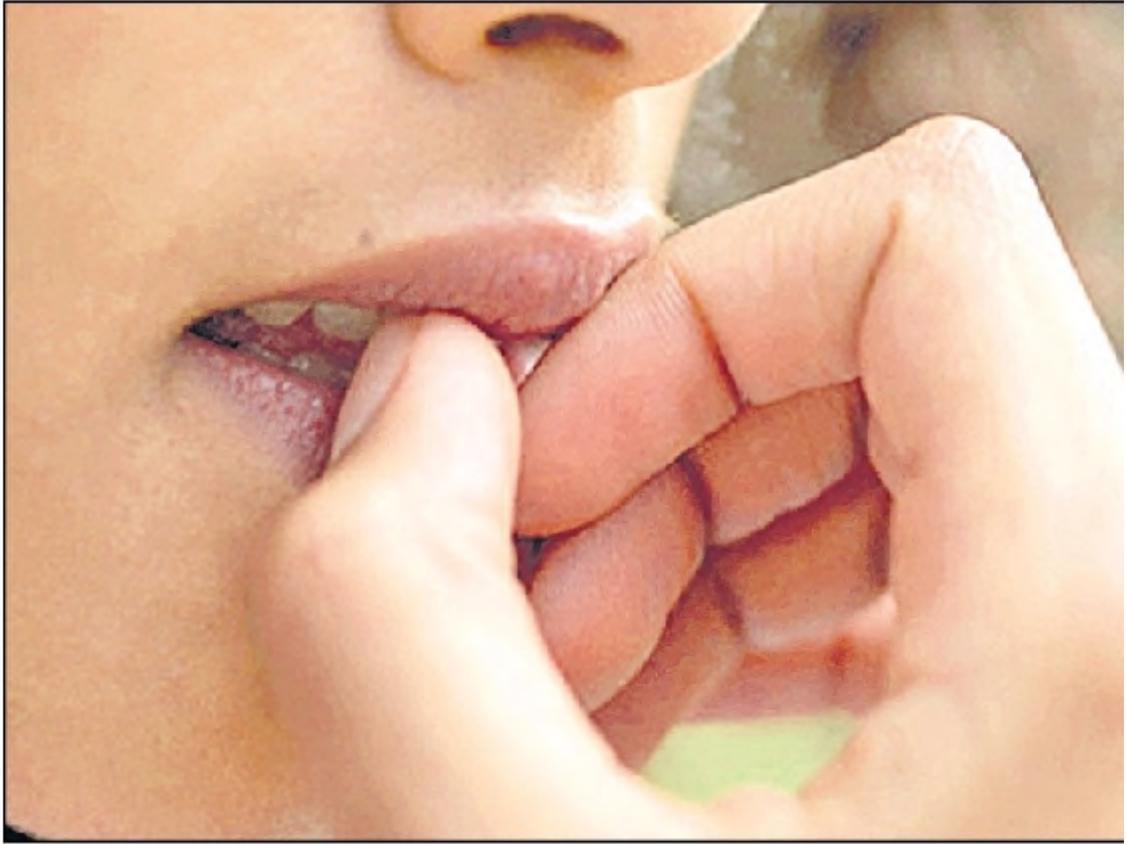
खान-पान और नियमित कसरत करना जरूरी है। बीस वर्ष की आयु के बाद हर पांच साल में कोलेस्ट्रॉल की जांच करनी चाहिए। मेनोपॉज के बाद महिलाओं को कोलेस्ट्रॉल स्तर पर विशेष ध्यान देना चाहिए। आयुर्वेद में बढ़े कोलेस्ट्रॉल को कम करने के लिए आयुर्वेदिक उपाय काफी कारगर हैं। फलकर्म से शरीर शोधन के बाद अर्जुनरिज, पुनर्नव मंडूर, आरोग्यवर्धनी, त्रिफला, चंद्रशामा वटी, तुलसी, धनिया, अर्जुन की छाल के चूर्ण का कढ़ा आदि के द्वारा इसका इलाज किया जाता है।

SPD

एसपीडी केवल आदत नहीं है! (Hindustan: 20190222)

http://epaper.livehindustan.com/textview/115250_61090364_4_13_22-02-2019_1_0.html

कमी-कमर हम सभी अपने नाखून या उसके आसपास की त्वचा को चबा बैठते हैं। पर, जब ऐसा करना गंभीर आदत का रूप ले ले, आप खुद को रोक ना सकें या त्वचा पर घाव बनने लगें, तो यह एक विकार हो जाता है। लेकिन, अच्छी बात यह है कि इसका उपचार किया जा सकता है।



कुछ लोगों को नाखूनों के पास की त्वचा चबाने की आदत होती है। बार-बार ऐसा करते रहने पर कई बार खून आने लगता है, घाव हो जाते हैं व निशान पड़ जाते हैं। अगर ऐसा है तो यह महज आदत नहीं है। इसे स्किन पिकिंग डिसऑर्डर यानी एसपीडी कहते हैं, जो मनोवैज्ञानिक विकार भी हो सकता है।

क्या हैं लक्षण

यह कहना मुश्किल है कि कभी-कभार तनाव या बेचैनी के क्षणों में नाखूनों के आसपास की त्वचा चबाने या नोचने लगना, कब आदत बन जाता है और फिर गंभीर समस्या। यह डिसऑर्डर बच्चों व बड़ों में किसी भी उम्र में हो सकता है।

कुछ में यह केवल एक आदत होती है और कुछ में यह मानसिक विकार का रूप ले लेती है। कब उपचार जरूरी है, इस बारे में कुछ सवाल खुद से पूछें...

- क्या दिनभर में कई बार नाखूनों की त्वचा को चबाते हैं ?
- क्या त्वचा पर घाव हो गए हैं या उनसे खून आने लगा है ?
- आप खुद इस आदत को छोड़ना चाहते हैं? सब टोकते हैं ?

उपचार

एसपीडी को थेरेपी व दवाओं से ठीक किया जाता है। कितनी ही बार छोटे-छोटे उपायों से ही सुधार आने लगता है-

हैबिट रिवर्सल टेनिंग : इसके तहत