DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE Day

Wednesday 201901106

Abortion rules

Govt set to ease abortion rules (The Hindu: 201901106)

https://www.tribuneindia.com/news/nation/govt-set-to-ease-abortion-rules/856811.html

Changes to India's 48-year-old abortion law are set for Union Cabinet clearance with the Ministry of Health finalising the revolutionary draft law at its end.

The Medical Termination of Pregnancy Amendment Bill 2019 proposes sweeping reforms to the mother legislation of 1971 and easing existing abortion rules for a special set of women that will include victims of rape and incest; single mothers and widows and women confronting life threatening foetal complications and abnormalities.

The existing MTP Act 1971 does not allow abortions beyond the foetal age of 20 weeks. The draft amendment Bill however relaxes the ceiling for abortion to 24 weeks for a defined category of women mainly featuring victims of sexual violence, whose rights have been viewed as special.

The amendment law is significant as it comes close on the heels of the Centre telling the Supreme Court in a recent petition that the right to reproductive autonomy of a woman cannot be greater than the state's duty to protect an unborn child who cannot speak for itself.

The Health Ministry, after comprehensive consultations, however agreed to relax the rigid 20-week ceiling for abortions for women who have suffered rape, incest and other forms of violence, with the crimes against women assuming epidemic proportions.

Sources in the Ministry said the "special category of women can include more sets such as single mothers and widows."

"The amendments aim to provide safe, affordable, accessible and acceptable abortion services and expand the access to abortion services on therapeutic, eugenic, humanitarian and social grounds," said a top ministry source.

Another set of women who are likely to be allowed eased abortion rules (up to 24 weeks) are women with foetuses certified by doctors to be "incompatible with life".

It remains to be seen whether for the second category of women the gestational age of the foetus and the abortion ceiling will be dropped altogether, as was the thinking during consultations.

Key features

Health Ministry finalises the landmark pro-women draft law that raises the ceiling for abortions from the current 20 weeks to 24 weeks for a special set of women, including rape and incest victims

Lung infections

Lung infections accounted for 69% morbidity in 2018: National Health Profile report (The Hindu: 201901106)

https://www.thehindu.com/sci-tech/health/indian-lungs-under-extreme-stress/article29891563.ece

Acute Respiratory Infections affect children the hardest, say experts

Acute Respiratory Infections (ARI) accounted for 69.47% of morbidity last year which was the highest in the communicable disease category leading to 27.21%

Air quality

Air quality inches back to ‘very poor’ (The Hindu: 201901106)

https://www.thehindu.com/news/cities/Delhi/air-quality-inches-back-to-very-poor/article29892413.ece

After an extended spell of ‘severe’ levels of pollution, the air quality of Delhi on Tuesday fell in the ‘very poor’ category due to positive influence of faster boundary layer winds.

Sleeping

Deep sleep may calm, reset anxious brain: Study (The Tribune: 201901106)

https://www.tribuneindia.com/news/health/deep-sleep-may-calm-reset-anxious-brain-study/856741.html

A sleepless night can trigger anxiety by up to 30 per cent while a full night’s nap can stabilise emotions, according to a study which recommends deep sleep as a non-pharmaceutical remedy for anxiety disorders.

People suffering from the mental health disorder are bombarded by feelings of worry, anxiety, or fear that are so strong that they interfere with their daily activities, the study, published in the journal Nature Human Behavior, noted.

The researchers, including those from the University of California (UC) Berkeley in the US, found that deep sleep—also known as non-rapid eye movement (NREM) slow-wave sleep—can calm and reset the anxious brain.

In this sleep state, oscillations in the electrical activity in the brain’s neurons become highly synchronized, and the heart rate and blood pressure drops, the researchers said.

The findings of the study revealed a new function of deep sleep in which anxiety is decreased overnight by reorganizing nerve connections in the brain.

According to the researchers, the study provides one of the strongest links to date between the brain circuits involved in sleep and anxiety.

“Our study strongly suggests that insufficient sleep amplifies levels of anxiety and, conversely, that deep sleep helps reduce such stress,” said study lead author Eti Ben Simon from UC Berkeley.

As part of the study, the researchers scanned the brains of 18 young adults using functional MRI, polysomnography and other measures as they viewed emotionally stirring video clips after a full night of sleep, and again after a sleepless night.

They measured the anxiety levels of the participants following each session via a questionnaire known as the state-trait anxiety inventory.

When the participants did not get any sleep, their scans showed a shutdown of a brain region called the medial prefrontal cortex, which normally helps keep our anxiety in check, while the brain's deeper emotional centers were overactive, the researchers said.

"Without sleep, it's almost as if the brain is too heavy on the emotional accelerator pedal, without enough brake," Walker said.

The results revealed that the participants who had a full night of sleep had significantly reduced anxiety levels, especially for those who experienced more slow-wave NREM sleep.

"Deep sleep had restored the brain's prefrontal mechanism that regulates our emotions, lowering emotional and physiological reactivity and preventing the escalation of anxiety," Simon said.

The researchers replicated the results in a study of another 30 participants, showing that those who got more nighttime deep sleep experienced the lowest levels of anxiety the next day.

Simon and his team also conducted an online study tracking how the sleep and anxiety levels changed for four consecutive days in 280 people of different ages.

The results revealed that the amount and quality of sleep from one night to the next predicted the anxiety levels they would feel the next day.

The researchers said that even subtle nightly changes in sleep affected the participants' anxiety levels.

"People with anxiety disorders routinely report having disturbed sleep, but rarely is sleep improvement considered as a clinical recommendation for lowering anxiety," Simon said.

The study, the researchers said, not only establishes a causal connection between sleep and anxiety, but also identifies the kind of deep sleep needed to calm an overanxious brain. — PTI

Skin cancers

Some skin cancers may start in hair follicles (The Tribune: 201901106)

https://www.tribuneindia.com/news/health/some-skin-cancers-may-start-in-hair-follicles/856270.html

Some of the most deadly skin cancers may start in stem cells that lend colour to hair, and originate in hair follicles rather than in skin layers, says a new study.

Hair follicles are complex organs that reside within skin layers. It is there that immature pigment-making cells develop cancer-causing genetic changes—and in a second step—are exposed to normal hair growth signals.

The study, published in the journal Nature Communications, found that unlike their normal counterparts, newly cancerous pigment stem cells then migrate up and out of the follicles to establish melanomas in nearby surface skin before spreading deeper.

The study was conducted in genetically engineered mice, with the results confirmed in human tissue samples.

“By confirming that oncogenic pigment cells in hair follicles are a bona fide source of melanoma, we have a better understanding of this cancer’s biology and new ideas about how to counter it,” said study author Mayumi Ito Suzuki, Associate Professor at New York University.

The study addresses the stem cells that mature into melanocytes, cells that make the protein pigment melanin, which protects skin by absorbing some of the sun’s ultraviolet, DNA-damaging rays.

By absorbing some wavelengths of visible light, but reflecting others, pigments “create” hair colour.

In a series of elegant steps, the research team established a new mouse model for the study of melanoma, one engineered such that the team could edit genes in follicular melanocyte stem cells only (the c-Kit-CreER mouse).

This capability enabled researchers to introduce genetic changes that made only melanoctye stem cells - and their descendants destined to form melanomas - glow no matter where they travelled.

Able to accurately track a key stem cell type for the first time, the authors confirmed that melanoma cells can arise from melanocyte stem cells, which abnormally migrate up and out of hair follicles to enter the epidermis, the outermost layer of skin.

The team then tracked the same cells as they multiplied there, and then moved deeper into the skin layer called the dermis.

Once there, the cells shed the markers and pigment that went with their follicular origins, presumably in response to local signals.

They also acquired signatures similar to nerve cells (neurons) and skin cells (mesenchymal), molecular characteristics “almost exactly like” those noted in examinations of human melanoma tissue.

Knowing where to look for the original, cancer-causing event, the researchers temporarily eliminated signals one by one in the follicular environment to see if cancer still formed in their absences.

“Our mouse model is the first to demonstrate that follicular oncogenic melanocyte stem cells can establish melanomas, which promises to make it useful in identifying new diagnostics and treatments for melanoma,” said first study author Qi Sun. IANS

Salt Room Therapy (The Asian Age:: 201901106)

http://onlineepaper.asianage.com/articledetailpage.aspx?id=14051470

Salt stories

Have you ever heard of salt room therapy? It might sound like a relaxing spa or a sauna, involving lots of salt. But it is much more than that believe doctors, who swear by its miraculous powers.

JOYEETA BASU

Salt room therapy is actually a drug-free treatment that has been around for ages and is popular in many countries because of its alleged health benefits. A spell in the salty confines of such grottos offers all kinds of health benefits, from relieving asthma to improving blood circulation and lowering blood pressure. We speak to some doctors about it.

SO, WHAT IS IT REALLY?

Dry salt therapy or halotherapy is performed in a spacious cave-like room with salt-coated walls and floor. Salt is then released into the room in a controlled manner, which penetrates deep into the lungs, releasing mucus. The person comes out feeling invigorated and with clearer lungs.

This is down to the incredible properties of salt, which is rich in minerals such as iodine, potassium and bromide, said doctors. While we usually get its benefits by eating it, we can also absorb them by sitting in a room full of it.

SPEAKING FROM EXPERIENCE

Director of one of the first organisations to start salt therapy in India and former general surgeon, Dr Ravi Prakash, explains, "Every time I got off a long flight, I found it difficult to breathe and more susceptible to infections. Planes tend to have a lot of pollutants inside the confined environment and my immune levels were probably low. But halotherapy made me feel a whole lot better."

Dr Balaji Gupta

SIMPLE SCIENCE

Explaining the science behind how it works, he says, "It is the mucus inside our lungs that impairs our breathing capacity. When salt gets inside, it dilutes the mucus and expels it. We start to breathe better, which improves the oxygen levels in our blood." This improved blood circulation, in turn, makes our immune levels stronger. "It would make 99 percent of people feel good unless someone has an underlying pathology such as chronic disease where the lungs are consolidated," added Dr Prakash.

WHY IS IT NOT A TREND YET?

Though the therapy has caught on in other parts of the world such as the UK and the US, it is still relatively new in India. Paediatric dentist Dr Balaji Gupta, who started a salt therapy business two years ago, had to shut it down due to a lack of awareness. But he still swears by it. Salt, he said, is antibacterial, anti-inflammatory, loosens mucus and speeds up mucociliary transport and removes airborne pollution. It also has moisturising properties, which is great for some skin conditions.

Dr Prakash added that it was at a dinner inside a salt cave in Krakow, Poland that he learnt that nobody working in a salt mine has ever suffered from a lung disorder. "It is an age-old therapy that was used all over the world by the kings and the elite. Unfortunately, people believe in medicines and want quick results but it is especially beneficial in cities, polluted with dust, smoke and allergens. The allergies can be neutralised to a great extent and carbon in the lungs reduced." It is suitable for anyone over one-year-old.

WHAT DOES RESEARCH INTO HALOTHERAPY SAY?

While a 2007 NCBI study on "The effect of a dry salt inhaler in adults with COPD," found people with chronic obstructive pulmonary disease (COPD) had fewer symptoms and improved quality of life after the therapy, a separate 2014 study concluded that most studies on halotherapy for COPD are flawed. Almost all research on the treatment for depression or skin conditions are anecdotal, which means it's based on people's personal experiences.

ALLEGED BENEFITS OF SALT ROOMS

Ease smoking-related symptoms, such as a cough, shortness of breath, and wheezing. Treat depression and anxiety. Cure some skin conditions, such as psoriasis, eczema, and acne.

Toxic Air (The Asian Age:201901106)

http://onlineepaper.asianage.com/articledetailpage.aspx?id=14051472

Toxic air, hungry kids: Divisive politics rules

Patralekha Chatterjee

Dev 360

Delhi has recently had a burst of unseasonal rain – a big relief amid the dangerous air pollution, officially labelled a public health emergency. Perhaps, folks in other cities with blue skies will take a temporary break from trolling its residents. The real worry is that despite all the hand-wringing and non-stop coughing, Delhiites and residents of all the other cities in the country with dangerous levels of air pollution will settle down once again to a familiar angst-laced resignation.

The story is the same every year.

Malnutrition and air pollution are among the top health risks facing India. But in this country, sadly, both are at risk of being turned into sectarian, "us and them", either/or, binary issues.

Listening to some of the public discourse around these issues, you would not think that they pose such a grave threat to India's present and future.

Take air pollution, which has been a top headline grabber. India has some of the world's most polluted cities but every Diwali, in recent years, there is a template response from a section of the populace who see bursting crackers as an essential part of being a good Hindu. This year was no different, despite the Supreme Court's ruling about "green firecrackers" and mandated times for bursting them.

Many people violated the rules. Some were even triumphalist. The argument is that it is not

cumulatively contribute to making Delhi and so many other Indian cities smokestacks, shaving off years of the lives of their residents. There is crop burning, currently a key reason for the noxious air in much of north India; there is vehicular emission, road dust, and other factors. Together they make life and the air we breathe hellish.

There has been endless discussion on what should be done but the discussions come to nothing because each contributory factor is pitted against the other, and in the politically polarised milieu in India today, this also means that the Central government and governments of the affected states are unable to brainstorm together meaningfully.

Polluted air has wide-ranging health impacts — an elevated risk for heart attacks and strokes, a higher risk of asthma, reduced foetal growth, stunted development of children's lungs, and cognitive impairment which can impact one's life chances.

Twenty-two of world's 30 most polluted cities are in India, according to a recent report by Greenpeace.

"In 2016, a World Health Organisation (WHO) study found that 14 of the 20 world's most polluted cities belonged to India. Kanpur, in Uttar Pradesh, emerged as the city with the highest PM2.5 level, standing at 173 (17 times higher than the limit set for safety). It is estimated that in 2016, over nine lakh deaths were caused due to air pollution in India. Some other cities with high PM 2.5 levels include Faridabad

Research Foundation, a think tank, noted.

Delhi grabs the headlines but the poor air quality affects residents of the other cities just as much.

The other big issue which is critical to India's future is child under-nutrition.

The latest Global Hunger Index ranked India at the 102nd position, trailing its South Asian neighbours. The index is a weighted average of stunting and wasting rate, and the index noted that the percentage of wasted children in India increased from 16.5 to 20.8 between 2008-12 and 2014-18.

Poor nutrition in early life is extremely damaging and leads to stunting and loss of IQ, which has consequences for the individual, the community and the country. A recent nutrition survey by the health and family welfare ministry has also found that 35 per cent of children under the age of five years in India are stunted, while 17 per cent are wasted and 33 per cent are underweight.

But guess what is the big controversy in Madhya Pradesh, which has a large number of undernourished children, especially in the tribal areas?

The Madhya Pradesh government's plan to provide eggs to children in anganwadis is being slammed by the Bharatiya Janata Party (BJP), currently in the Opposition in the state.

Madhya Pradesh BJP leader Gopal Bhargava is in the news for his statement that making children eat eggs and meat can turn them into "cannibals later in life". Mr Bhargava also says eating non-vegetarian food is against Indian culture, a statement that is both absurd and totally inaccurate.

How do eggs in the diet of children at anganwadis become a political

"What else can you expect from this malnourished government? They are now feeding children eggs... force them to eat chicken, mutton. Indian culture doesn't allow eating non-vegetarian food. If they begin to eat eggs and meat from childhood... they may become cannibals later," Mr Bhargava told reporters.

Eggs are universally recognised as a source of cheap protein. How do eggs in the diet of children at anganwadis become a political issue? Once again, it is the same template — a serious issue being framed as a sectarian one, stoking divisive passions.

Unsurprisingly, those pitching politics against nutrition and rooting for only vegetarian food don't actually go down and see the quality of vegetarian food that the poor children typically eat. More often than not, they don't get the necessary nutrients.

The losers are the children.

The BJP state unit has described the MP government's move as "interfering with the faith and religious beliefs of the people" and has sworn to oppose the proposal.

Under the previous BJP government, a similar scheme was proposed in 2015. But Shivraj Singh Chouhan, the then chief minister, junked it.

Which brings me to the moot point.

In which other country do polluted air and eggs become polarising issues with political parties and interest groups engaged in perennial finger-pointing at each other while the people continue to suffer?

It's time to say "stop" and not let anyone get away with a diversionary narrative or with thwarting public health goals in the name of religion and culture and party politics. Our lives and livelihoods are at

Dr. Naturrrre (The Asian Age: 201901106)

http://onlineepaper.asianage.com/articledetailpage.aspx?id=14051472

DrNature

Our metros are polluted, but our skin needn't be. Just go for these natural solutions!

ROSE WATER

Pollutants in the air can leave your skin irritated and itchy. Rosewater is not only a natural cleanser for your skin but also helps soothe this irritation. Rich in vitamins and antioxidants, rosewater also maintains the pH level of your skin and removes excess oil. For best results, simply soak some cotton into rose water and apply as a cleanser at the end of the day.

OATMEAL

The benefits of oatmeal aren't limited to keeping your blood sugar in check: its anti-inflammatory qualities make it an excellent go-to choice for your face in this pollution. Mix oatmeal powder into a little water and apply the paste to soothe your skin of inflammation. If pollution leaves your skin dry, use a layer of boiled oatmeal paste to exfoliate

Bad Air (Hindustan Times: 201901106)

https://epaper.hindustantimes.com/Home/ArticleView

Bad airDelhi takes a breath, but bad air chokes UP, Bihar

New Delhi/Patna/Lucknow : Air pollution in Kanpur, Lucknow and Patna was at “severe” levels, Central Pollution Control Board (CPCB) data showed on Tuesday, suggesting the plume of smoke from farm fires in Punjab and Haryana that choked Delhi and the national capital region (NCR) on Sunday has moved down the Gangetic plain.

The air quality index (AQI), according to CPCB’s 4pm bulletin, was 453 for Kanpur, 416 for Lucknow and 414 for Patna – similar to the levels seen in Delhi-NCR on Sunday. Beginning Monday, strong winds hit the NCR region, bringing the AQI into “very poor” category, or the 301-400 range.

“Not just Delhi, most of India is hit by air pollution crisis. Dispersion models show the plume is travelling eastwards and impacting air quality,” said Raj Bhagat Palanichamy, a remote sensing analyst at World Resources Institute.

According to a CPCB scientist, “the strong north-westerly winds are taking pollutants collected over the northern plains towards eastern India and Bay of Bengal. It is a reason for spurt in pollution levels in several towns in the region. We expect the situation to improve in the next few days.”

The pollution in Delhi-NCR had reached levels that are regarded a public health emergency. While the problem did not appear to be that acute in other cities where the pollution had spread to, the air was hazardous for people in vulnerable groups such as children and the elderly.

Projections on the EarthWindMap (earth.nullschool.net) showed the pollutants reaching as far south as Visakhapatnam, where the AQI was in the poor category – between 201 and 300 – since Sunday. On Saturday, the AQI was far lower, at 125 – a category considered moderate.

Pollution monitoring officials said further risk of air quality worsening could not be ruled out since farm fires were continuing in Punjab and Haryana. According to satellite imagery analysis by Punjab Agriculture University, there were 6,668 fires on Tuesday – possibly a new single-day record.

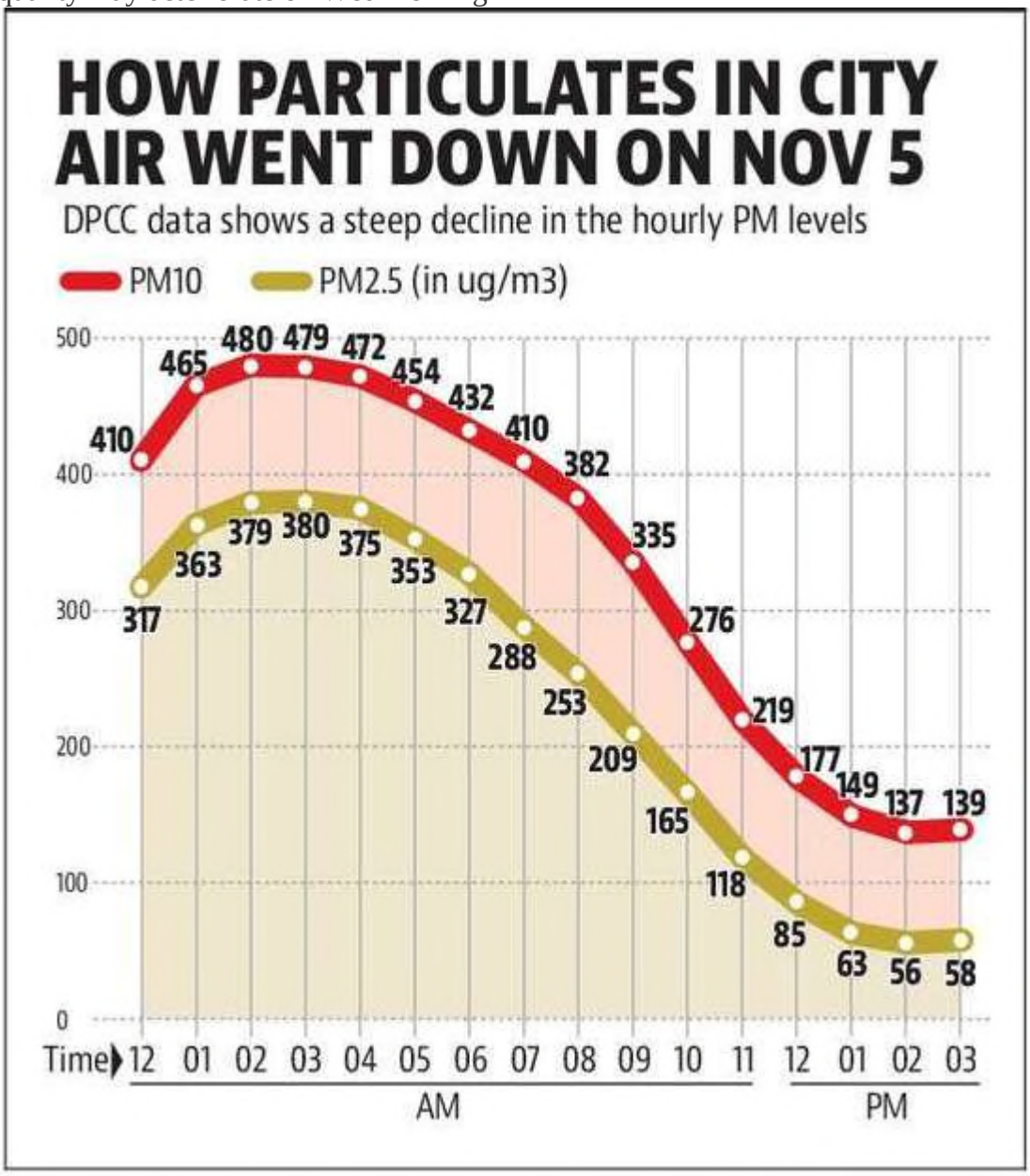
The Supreme Court on Monday ordered a complete prohibition on crop stubble burning and said the capital’s residents were “losing precious years” of their lives, adding “people are dying, this just cannot happen in a civilised country.” On Tuesday, the SC registered a fresh case on its own and said it will take up the matter on Wednesday. A special bench of Justices Arun Mishra and Deepak Gupta will hear the suo motu case entitled, “Alarming rise in air pollution in Delhi and adjoining areas”, for hearing along with the pending matters on pollution.

The principal secretary to the Prime Minister, PK Mishra held a high-level meeting with senior officials in Punjab, Haryana and Delhi through video conferencing on Sunday where it was decided that strict action will be taken. “PM Narendra Modi chaired a meeting in which the situation arising due to pollution in various parts of northern India was discussed,” the Prime Minister’s Office tweeted later.

Dust Particles (Hindustan Times: 201901106)

https://epaper.hindustantimes.com/Home/ArticleView

Winds help city breathe a little easy on TuesdayPoor forecast Agencies, however, say air quality may deteriorate on Wed morning



: Clear skies, a bright sun and strong surface winds on Tuesday helped the air quality improve to the ‘very poor’ zone after reeling in ‘severe’ conditions for the past two days.

The hourly particulate matter (PM) concentration too came down remarkably on Tuesday afternoon, after remaining in the ‘emergency’ zone the previous day.

Pollution monitoring agencies said air quality is likely to deteriorate again for a while on Wednesday morning but will recover by evening. This is mainly on account of reduced wind speed and cloud formation, increasing the moisture content in the air, which traps pollutants.

The 24-hour-average air quality index (AQI) as calculated by the Central Pollution Control Board (CPCB) at 4 pm on Tuesday was 324. This was against 407 the previous day and a marked improvement from Sunday, the worst air day recorded since 2016 with an AQI reading of 495.

The real-time average concentration of PM 2.5 levels – the most harmful aerosols -- came down to the safe limits to 58 ug/m3 by 3 pm on Tuesday after being in the 'emergency' zone at 380ug/m3 at 3 am, data released by the Delhi Pollution Control Committee (DPCC) said.

According to Indian standards, the safe limits of PM 2.5 is 60ug/m3. If the levels reach 300ug/m, it is considered to be in the 'emergency' zone.

As per CPCB data, on Monday at 6 pm, the 24-hour average PM 2.5 concentration was 195 ug/m3. On Monday, around the same time, the level was above the emergency mark of 300ug/m3 and started falling after 7 pm. The level was nine times above the safe limit at 550ug/m3 on Sunday when Delhi was enveloped in a blanket of smog.

"It was a bright, sunny and windy day, which helped in dispersion of pollutants. As per inputs from the India Meteorological department, air quality may dip again on Wednesday because of formation of clouds resulting from a Western Disturbance, but the magnitude will not be very high and pollutants will dissipate by evening. It is likely to remain in 'very poor' zone," said a senior CPCB official.

Most Polluted Cityes (Hindustan Times: 201901106)

https://epaper.hindustantimes.com/Home/ArticleView

Not just winter, bad air troubles Delhi, neighbours round the yearHT analysis Delhi, Noida, Ghaziabad, Gurugram and Faridabad were among the world's most polluted cities in 2018

YEAR-ROUND AIR POLLUTION

Delhi was recently the most polluted city in the world but this problem isn't spec
winters. Air in and around Delhi remains polluted throughout the year.

CHART 1 8 INDIAN CITIES AMONG 11 MOST POLLUTED IN 2018

Rank	City	Annual PM 2.5 (µg/m3)
1	**Gurugram, India**	**136**
2	**Ghaziabad, India**	**135**
3	Faisalabad, Pakistan	**130**
4	**Faridabad, India**	**129**
5	**Bhiwadi, India**	**125**
6	**Noida, India**	**124**
7	**Patna, India**	**120**
8	Hotan, China	**116**
9	**Lucknow, India**	**116**
10	Lahore, Pakistan	**115**
11	**Delhi, India**	**114**

CHART 2 AIR IN, AROUND POLLUTED YEAR-

Monthly average PM 2.5 (µg/m3)
Noida, Ghaziabad, Gurugram an

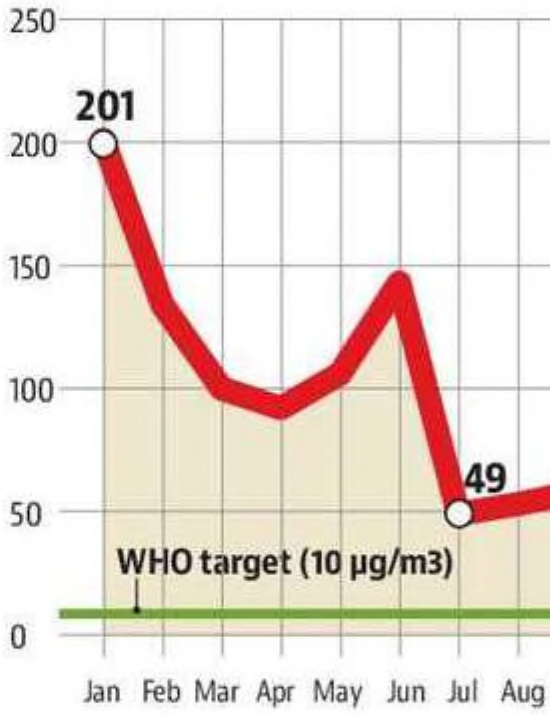


CHART 3 DELHI, NEIGHBOURING CITIES AMONG MOST POLLUTED

The table below gives rank of Delhi and four of its neighbouring cities among 2,612 cities

City	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct
Gurugram	26	27	9	8	4	2	10	7	2	1
Ghaziabad	1	4	8	13	5	4	18	31	15	2
Faridabad	13	11	33	10	3	5	7	3	1	3
Noida	2	7	17	16	13	8	40	37	6	5
Delhi	8	13	27	15	10	12	53	64	21	6

PM 2.5 in microgram per cubic metre; Source: AirVisual

Delhi was the most polluted city in the world on Sunday, according to global air quality monitoring website, airvisual.com, as a blanket of dense smog covered the city through the day. Air pollution levels increase in Delhi and other regions in northern India in winter every year, but what often remains underestimated is that Delhi's air pollution problem is not confined only to the winter.

Delhi and its neighbouring cities — Noida, Ghaziabad, Gurugram and Faridabad — were among the most polluted cities in the world all round the year in 2018, a Hindustan Times analysis with data from airvisual.com shows.

The website has ranked these five cities among the world's 11 most polluted cities in 2018. Gurugram and Ghaziabad topped the list. The ranking is based on the annual average concentration of fine particulate matter PM 2.5, a hazardous pollutant able to penetrate deep into human respiratory system and, from there, to the entire body. Three other Indian cities — Bhiwadi, Patna and Lucknow — were also among these 11 cities. (See chart 1)

The website also gives monthly average of PM 2.5 levels for all 12 months of 2018 for 2612 cities in the world. An analysis of this data shows that at least Delhi, or one of its four neighbouring cities, was among the eight most polluted cities in the world every month.

Average PM 2.5 level of these five cities was less than, or slightly more than, 50 micrograms per cubic meter (µg/m³) — normally considered safe for human life — in only three months: July, August and September. (See chart 2)

But even in these months, Delhi and its neighbouring cities were among the most polluted worldwide. For instance, Faridabad ranked seventh in July, third in August and first in September even as its average PM 2.5 level was less than 75 µg/m³ in this period. Except in July and August, all these five cities have ranked among 33 most polluted cities in the world. (See chart 3)

These figures suggest that even as air pollution levels in Delhi and its neighbouring region peaks only in winter, it is a significant problem throughout the year.

Hair follicles

Hair follicles can be a site of origin for melanoma (Medical News Today: 201901106)

https://www.medicalnewstoday.com/articles/326923.php#5

New research argues that melanoma can start not only in the skin, but also inside hair follicles. When they become cancerous, the cells then leave the follicles and move into the skin's outermost layer, or epidermis.

New research suggests that melanoma could originate in hair follicles, shown here.

The scientists demonstrated this effect in a new mouse model of human melanoma and confirmed it in samples of human tissue.

In a recent Nature Communications study paper, the team describes melanoma starting in immature, pigment producing cells in hair follicles, then moving into the epidermis.

Melanoma is an aggressive skin cancer that is very difficult to treat in its advanced stages.

For this reason, while only 1% of peopleTrusted Source who develop skin cancer have invasive melanoma, it is responsible for most deaths due to skin cancer.

The cancer begins in melanocytes, which are the cells that make the pigment that gives color to the hair, skin, and eyes. This pigment is called melanin.

The new study focuses on melanocyte stem cells, which are cells that have not yet fully differentiated into their final mature state.

The strain of mice that the team genetically engineered for the study addresses a need for better animal models of how human melanoma begins and progresses.

Researchers who have used previous models of the disease have maintained that exposure to sunlight is a major risk factor for melanoma.

However, the new mouse model reveals that the cell environment inside hair follicles can also trigger cancer in melanocyte stem cells.

"Our mouse model," says first study author Qi Sun, Ph.D., a researcher in dermatology and cell biology at The New York University School of Medicine, "is the first to demonstrate that follicular oncogenic melanocyte stem cells can establish melanomas, which promises to make it useful in identifying new diagnostics and treatments for melanoma."

Using the new model, the team demonstrates three stages of melanoma arising in hair follicles then entering the skin.

In the first stage, melanocyte stem cells undergo genetic changes that make them cancerous. The second stage spurs the cancer further by exposing the cancerous cells to growth signals — the same signals that promote hair growth.

In the third stage, the newly cancerous melanocytes move upward in the hair follicle, leave it, and enter the surrounding epidermis to establish tumors that then spread deeper.

The team believes that the findings offer a better understanding of melanoma's biology and could lead to new ideas about how to stop it.

From stem cell to descendants in tumors

From a single stem cell, an embryo grows into a fetus with multiple and various organs and tissues comprising hundreds of different cell types. All this is thanks to the ability of stem cells to divide, multiply, and differentiate into a plethora of specialized cells.

Stem cells can also switch cell type. While this flexibility is an asset during development, it can be hazardous in adulthood, when there is a risk that it might help drive cancer.

Scientists believe that this flexibility makes it difficult to pin down the stem cell of origin in melanoma.

Knowing the stem cell of origin could make it easier to track the progress of the cancer, rendering the disease less difficult to treat.

Because melanocytes are cells that make the pigment that colors the skin and eyes, as well as the hair, the researchers needed a way to manipulate only melanocyte stem cells in hair follicles.

They achieved this by genetically engineering a breed of mice that they called the c-Kit-CreER mouse. With this mouse model, they could alter the genes of melanocyte stem cells in hair follicles without impacting those in other parts of the body.

In addition, by altering the genes in the new mouse model, the researchers could make the follicular melanocyte stem cells glow and trace their glowing descendant cancer cells, regardless of where they ended up.

This feature allowed the team to track the full journey of the melanocyte stem cells, from hair follicle to epidermis, then deeper into the dermis — or inner layer of skin — as the melanoma tumor formed.

Follicular signals can trigger melanoma

In another set of experiments, the researchers tested what happened when they silenced cell environment signals in the hair follicle one by one.

These showed that, even when melanocyte stem cells had taken on cancerous properties, they did not travel and divide to form melanomas unless they received two particular signals from their environment.

These signals are called Wnt and endothelin, and they normally promote proliferation of pigment cells and growth of the hair shaft in the follicles.

"While our findings will require confirmation in further human testing, they argue that melanoma can arise in pigment stem cells originating both in follicles and in skin layers, such that some melanomas have multiple stem cells of origin."

Meditation,

Can meditation, hypnosis, and CBT help address the opioid crisis? (Medical News Today: 201901106)

https://www.medicalnewstoday.com/articles/326924.php

A first-of-its-kind review and meta-analysis of specialized literature suggests that mind-body therapies, such as meditation and cognitive behavioral therapy, can help ease physical pain and prevent the development of opioid use disorder.

group of people meditating

Meditation and other mind-body therapies could help relieve pain and reduce opioid use, according to a new review.

Opioids are a class of drugs that doctors sometimes prescribe for the treatment of acute chronic pain.

While effective, opioids can also be highly addictive. This has led to what many specialists refer to as the "opioid crisis," as many people end up misusing or overusing opioid prescription drugs.

In previous years, opioid use disorder — in which people compulsively overuse opioids — has led to approximately 118,000 annual deaths worldwide and about 47,600 deaths in the United States alone.

Increasingly, specialists are turning toward soothing, nonpharmacological methods of pain management to try to address the opioid crisis. These include mind-body therapies (MBTs), such as meditation, hypnosis, relaxation techniques, and cognitive behavioral therapy (CBT).

"To help combat the opioid crisis, guidelines encourage practitioners to consider nonopioid pain management options, including [MBTs]," write Prof. Eric Garland — from the University of Utah in Salt Lake City — and colleagues in their new systematic review and meta-analysis, which features in JAMA Internal Medicine.

Prof. Garland and team sought to find out whether and to what extent MBTs can help relieve chronic pain and prevent individuals who use or have used opioids from developing opioid-related health problems, including opioid use disorder.

'Significant' link with lower opioid use

The researchers analyzed the data from 60 reports, which included a total of 6,404 participants. These reports featured a range of MBTs, including meditation, hypnosis, relaxation, guided imagery, therapeutic suggestion, and CBT.

"Overall meta-analytic results revealed that MBTs had a statistically significant, moderate association with reduced pain intensity and a statistically significant, small association with reduced opioid dosing," the authors report.

Different MBTs, however, showed various levels of effectiveness when it came to relieving pain and reducing individuals' need for opioids.

More specifically, of the five studies looking at the effects of meditation, all five suggested that this intervention was associated with "significant improvements in pain severity," while four found that it also had a link with "significant improvements in opioid misuse, opioid craving, time to opioid cessation, and/or opioid use."

Bacteria

Study zeroes in on gut bacteria that may cause bowel cancer(Medical News Today: 201901106)

https://www.medicalnewstoday.com/articles/326910.php

Published Monday 4 November 2019By Ana Sandoiu Fact checked by Gianna D'Emilio

Scientists have identified a certain type of gut bacteria that may raise the risk of bowel cancer by up to 15%. The research method used in the new study indicates that these gut bacteria may likely play a causal role in the development of this form of cancer.

scientist examines bacteria in petri dish

Scientists have homed in on a bacterial group that may cause colorectal cancer.

Over 100,000 new cases of colon cancer and more than 44,000 new cases of rectal cancer will have developed in the United States in 2019, according to the American Cancer Society.

Colorectal cancer, also known as bowel cancer, is the third leading cause of cancer death in both men and women. And, according to the National Cancer Institute, about 4.2% of men and women will receive a diagnosis of it at some point.

Although medical researchers have not yet unraveled the causes of bowel cancer, experts recognize that a few factors can raise a person's risk.

Being overweight or obese, not being physically active, smoking, or eating a lot of red meat and fried foods are some modifiable risk factors, that is, factors that one can change by making more healthful lifestyle choices.

Being older than 50 and having a personal or family history of bowel cancer, colorectal polyps, or inflammatory bowel disease can also influence risk.

New research adds an element to the list of risk factors: gut bacteria. In fact, the new study goes beyond merely finding associations and suggests that certain bacteria in our guts may cause colorectal cancer.

Kaitlin Wade, Ph.D., from the University of Bristol, in the United Kingdom, is the lead author of the new research, which she presented at the National Cancer Research Institute Cancer Conference in Glasgow.

Metacognitive therapy

Metacognitive therapy may prevent depression relaps (Medical News Today: 201901106)

https://www.medicalnewstoday.com/articles/326889.php

Ending the cycle of negative thought rumination is the premise of a depression treatment called metacognitive therapy. New findings suggest that it may be more beneficial in stopping depression relapse than other more commonly used methods.

therapist with client

New research suggests that a new form of therapy called metacognitive therapy may prevent depression from returning.

Depression is a huge global health issue. As the leading cause of disability in the United States for those between the ages of 15 and 44 years, it has a significant effect on individuals and society as a whole.

With more than 300 million people currently living with depression, finding a long lasting treatment is vital. Unfortunately, relapses are common.

Treatments, which include cognitive behavioral therapy (CBT) and medication, can work well in the short term, but many people's symptoms return either within a few months or later on in life.

In fact, only about 30% of people with depression have not relapsed 18 months after the end of their treatment.

The findings of the new study, which features in Frontiers in Psychology, provide early evidence of the benefits of metacognitive therapy.

Not only is recovery more likely using this treatment method, according to the authors, but people may find it less taxing.

While CBT requires a person to delve into their previous worries, metacognitive therapy teaches people not to concentrate on negative thoughts.

"Most of us have negative thoughts; we think we're not good enough, or we don't accomplish what we want to," explains Prof. Odin Hjemdal, who works in the department of psychology at Norwegian University of Science and Technology in Trondheim.

"But only [a] few people get clinically depressed because most of us can put aside our repeating thoughts, rather than getting stuck in them."

"What perpetuates depression," he adds, "is that you get stuck in a thought pattern and ruminate about the same thing over and over."

By becoming aware of this process, people can choose a different and less damaging path to tread.

Significant improvements

In the study, the researchers offered 39 participants with major depression 10 sessions of metacognitive therapy.

They then divided the participants into two groups. The participants in the first group received metacognitive therapy immediately, whereas those in the second group had to wait 10 weeks to begin treatment.

Depression

Could a combination of psychedelics and meditation treat depression? (Medical News Today: 201901106)

https://www.medicalnewstoday.com/articles/326890.php

Published Monday 4 November 2019By Lauren Sharkey Fact checked by Carolyn Robertson

Mixing a specific type of meditation with a well-known hallucinogen may make for a new form of therapy that could aid those with depression, according to a new study.

woman meditating

New research suggests that combining meditation and psilocybin may improve symptoms of depression.

People often still regard psychedelic psychotherapy as a controversial treatment. However, recent evidence suggests that hallucinogens may have benefits for depression and anxiety disorders when individuals use them with certain other therapies.

The reasoning behind this is still unclear, but one theory states that psychedelics can help quicken the realization and thought processes a person needs for their therapy to work.

Psilocybin, a psychedelic that people find in magic mushrooms, has been the subject of several studies. Its effects can range from assisting with social interactions to limiting a person's focus on themselves.

One such study, appearing in the Journal of Psychopharmacology in 2016, found that psilocybin, together with psychotherapy, produced antidepressant effects in patients with life-threatening cancer.

Researchers at Imperial College London found similar benefits in people with depression who had not responded to other treatments. Neuroimaging revealed the drug could turn off a part of the brain that is always on when a person is awake. Neuroscientists call this brain element the default mode network.

Earlier this year, the U.K. university opened the world's first center for psychedelics research. A trial currently underway at the center is comparing the effects of psilocybin with those of a well-known antidepressant.

In the meantime, according to new findings that now appear in the journal Scientific Reports, combining psilocybin with a form of meditation may produce even more positive benefits.

Mindfulness meditation is already known to have a similar psychedelic effect to psilocybin, including reducing self-focus and boosting feelings of self-transcendence.

In the latest study, a team from the University Hospital of Psychiatry Zurich in Switzerland has combined the two to look at the joint impact for the first time.

Some 39 Buddhist meditation practitioners took part in a 5-day mindfulness retreat. Guided by a Zen teacher, they stuck to strict schedules that lasted from 6 a.m. until 9 p.m.

What are magic mushrooms and psilocybin?

What are magic mushrooms and psilocybin?

We take a look at the benefits and risks of this hallucinogenic substance.

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The practice — known as sesshin — involves sitting meditation sessions, indoor and outdoor walking meditation, and mindful physical activities. Participants were silent throughout.

On the fourth day of the retreat, the researchers gave some participants psilocybin while administering a placebo to the remainder.

Blocking negative impacts

Using questionnaires and mindfulness scales, among other neurocognitive measurements, the team found that, after 4 months, psilocybin takers had more positive changes.

These changes related to aspects such as empathy, self-acceptance, and psychosocial functioning.

Notably, even before the 4-month follow-up, "psilocybin markedly increased the incidence and intensity of self-transcendence virtually without inducing any anxiety compared to participants who received the placebo," says Lukasz Smigielski, first author of the study.

In fact, researchers believe the skills gained during the meditation retreat helped guard against any negative impact from taking the psilocybin.

Predictors of a positive outcome included the depth of meditation and participants' optimism and openness.

Another treatment for depression?

The intensity of the retreat and expertise of the participants may have limited the application of the findings, however. It may take the average person longer to experience the full benefits of mindfulness meditation, and many individuals will not have access to a structured, retreat-type experience.

But, says study director Prof. Franz Vollenweider, the findings could pave the way for "new therapeutic avenues."

One example, he notes, could be "for the treatment of depression, which is often accompanied by increased self-focus and social deficits."

With millions of adults in the United States currently living with depression, according to the Anxiety and Depression Association of America, this novel method could provide many more research opportunities.

As with all such research avenues, however, it is likely to take time before psychedelic psychotherapy or psychedelic enhanced meditation wholly enter the mental health conversation.

Breast Cancer (Hindustan: 201901106)

http://epaper.livehindustan.com/imageview_362660_96435604_4_1_06-11-2019_22_i_1_sf.html

मेमोग्राफी की जगह रक्त की जांच करने से पता चल सकेगा

पांच साल पहले हो सकेगी स्तन कैंसर की पहचान

सेहत

06 लाख 27 हजार महिलाओं की मृत्यु हुई स्तन कैंसर से पिछले साल दुनियाभर में

21 लाख महिलाएं हर साल दुनियाभर में पीड़ित होती हैं स्तन कैंसर से

लंदन | एजेंसी

यूके में किए जा रहे एक शोध से जुड़े शोधकर्ताओं का कहना है कि अगर आर्थिक समस्या नहीं आई तो जल्द ही ऐसा रक्त परीक्षण उपलब्ध हो सकेगा, जिसके जरिए शरीर में स्तन कैंसर के लक्षण उभरने से पांच साल पहले ही होने की संभावना का पता चल सकता है। यह बात शोधकर्ताओं ने इस दिशा में किए जा रहे शोध के आधार पर अभी तक प्राप्त परिणामों को देखते हुए कहा है।

शोधकर्ताओं ने उन 90 मरीजों के रक्त के नमूने लिए जिनका स्तन कैंसर का इलाज चल रहा है, 90 उन मरीजों के रक्त के नमूने लिए जो पूरी तरह स्वस्थ हैं। अब 800 मरीजों के नमूने लेकर उनका नौ अलग कारकों के अनुसार परीक्षण कर रहे हैं ताकि पूर्व में किए गए शोध की सटीकता को फिर से परखा जा सके और अलग दिशाओं में भी जांच को आगे बढ़ाया जा सके। नॉटिंघम विश्वविद्यालय के पीएचडी छात्र के अनुसार रक्त की जांच जरिए स्तन कैंसर का पता शुरुआती चरण में लगने से यह टेस्ट उन देशों के लोगों के लिए खासतौर पर उपयोगी साबित होगा, जो मध्यम और कम कमाई वाली श्रेणी में आते हैं।

लाखों महिलाएं पीड़ित

विश्व स्वास्थ्य संगठन की रिपोर्ट के अनुसार, हर साल लगभग 21 लाख महिलाएं स्तन कैंसर का शिकार होती हैं। पिछले साल स्तन कैंसर के कारण दुनियाभर में छह लाख 27 हजार महिलाओं की मृत्यु हुई। यह अन्य प्रकार के कैंसर से होने वाली महिलाओं की मृत्यु का करीब 15 प्रतिशत है।

आसान होगी जांच की प्रक्रिया

अलफतानी के अनुसार, हमें इस शोध पर आगे काम करने और इसे अधिक विकसित करने की जरूरत है। स्तन कैंसर से जुड़े इस शोध में हमारे लिए यह साफ है कि स्तन कैंसर होने से पहले ही इसके प्रारंभिक लक्षणों को पहचाना जा सकता है।

Pain Killer (Hindustan: 201901106)

http://epaper.livehindustan.com/imageview_362660_96435294_4_1_06-11-2019_22_i_1_sf.html

दर्द निवारक दवाएं अवसाद का उपचार कर सकेंगी

लंदन। एक शोध में पता चला है कि एंटी-इंफ्लेमेटरी और दर्द निवारक दवाएं अवसाद को प्रभावी ढंग से खत्म कर सकती हैं। वैज्ञानिकों के मुताबिक, एंटी-इंफ्लेमेटरी जैसे इब्रुप्रोफेन और एस्प्रिन दवाओं से अवसाद का उपचार करना संभव है। ये दवाएं अवसादरोधी दवाओं की तुलना में सुरक्षित विकल्प हो सकती हैं। शोध में वैज्ञानिकों ने एंटी-इंफ्लेमेटरी दवाओं का अवसाद के लक्षणों पर पड़ने वाले प्रभाव के बारे में बताया। शोध में पाया गया कि इबुप्रोफेन और एस्प्रिन जैसी दर्द निवारक दवा के अलावा स्टेटिन और मछली के तेल में पाया जाने वाला ओमेगा -3 भी अवसाद के मुख्य लक्षणों को रोक सकता है।

Coffee (Hindustan: 201901106)

कॉफी से स्वस्थ रहती हैं आंतें

न्यूयॉर्क। अधिकतर लोग सुबह की शुरुआत चाय से करते हैं। लेकिन एक अध्ययन का कहना है कि कॉफी से भी लोग अपने मूड को तरोताजा कर सकते हैं। अध्ययन के मुताबिक, दिनभर में तीन कप कॉफी पीना स्वास्थ्य के लिए फायदेमंद साबित हो सकता है।

यह अध्ययन अमेरिकन कॉलेज ऑफ गेस्ट्रोएंट्रोलॉजी द्वारा किया गया है। इसके निष्कर्ष वार्षिक वैज्ञानिक सम्मेलन 2019 में प्रस्तुत किए गए, जिसका आयोजन सैन एंटोनियो में हुआ। अध्ययन के मुताबिक, कॉफी के सेवन से आतों के बैक्टीरिया स्वस्थ रहते हैं। साथ ही धमनियों और लीवर को स्वस्थ रखने और मधुमेह को संतुलित रखने में भी यह लाभदायक है।