



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE Day
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World Kidney Day

With three transplants in two decades, a family fights against chronic ailment (The Hindu: 20190318)

<https://www.thehindu.com/news/cities/Delhi/with-three-transplants-in-two-decades-a-family-fights-against-chronic-ailment/article26562925.ece>



arch 14 this year was celebrated as World Kidney Day with the aim to create global awareness on the importance of kidneys

“No matter how hard life is, don’t lose hope.” The phrase seems to be the motto of Etika Kalra, a resident of Delhi, who recently underwent a third kidney transplant at the Indraprastha Apollo Hospitals. “This time her husband donated his kidney to save her life even though their blood groups did not match,” stated a release issued by the hospital.

According to the hospital, in 1996, when Ms. Kalra was 23 years old and recently married, she found out during a routine check-up that her kidneys were shrinking. She was diagnosed with Glomerulonephritis, a type of disease in which the part of kidney which filters blood [called glomeruli] gets damaged. “Since then I have been constantly fighting a battle with this disease. Initially I explored various Ayurvedic treatments, but there was no relief and the creatinine levels in my blood continued to rise,” said Ms. Kalra.

In December 2000, she had to start regular dialysis as her kidneys were no longer functioning properly.

First transplant

Ms. Kalra underwent her first transplant in 2001 when her elder sister, Anshoo Walia, donated her kidney. For more than a decade the donated kidney served her well, but the life of such organs is limited. By 2014, Ms. Kalra again started facing kidney problems.

“By the time we found out that her first kidney was failing, it was too late to start dialysis again. Her health was deteriorating fast and so we opted for a pre-emptive transplant. This time, her other sister, Ritu Pahwa, donated a kidney,” said Dr. Sandeep Guleria, senior consultant, general surgery, GI surgery and transplantation, Indraprastha Apollo Hospitals.

Explaining the procedure and the unexpected complications which arose after the second transplant, Dr. Guleria said: “Etika was still in the ICU when she started complaining of severe stomach pain. It was found that she had gangrene of intestine for which we had to do an immediate major abdominal surgery to save her life. This was while she was still recovering from her second kidney transplant and it made her quite weak.”

Second procedure

The second kidney was functional only for about four years after which it started failing. “It was a case of acute antibody rejection of the transplanted organ, in which the patient’s own immune system started attacking the kidney. There were only two viable options for her at that time — either live on dialysis for the rest of her life or undergo another kidney transplant,” explained the doctor.

The patient chose the latter and this time her husband, Tarun, came forward to donate his kidney. The family was counselled about the difficulties and the added pressure of blood groups not matching.

Third challenge

“The third transplant took five and a half hours since it was technically more difficult. We successfully overcame that barrier and transplanted the third kidney,” stated the release.

The patient, according to the hospital, is now doing well. “Even after the third transplant, the precautions I have to take are the same as before. The food I eat has to be hygienic and freshly prepared. Eating outside should be avoided, and it is essential to take medicines on time,” Ms. Kalra said.

AIDS, TB and malaria

If global fight against AIDS, TB and malaria is going to be won, it has to be won in India’ (The Times of India: 20190318)

<https://timesofindia.indiatimes.com/blogs/academic-interest/if-global-fight-against-aids-tb-and-malaria-is-going-to-be-won-it-has-to-be-won-in-india/>

Last month the government hosted a preparatory international meeting for the replenishment of the Global Fund to Fight AIDS, TB and Malaria, which is seeking to raise \$14 billion for funding health systems globally over the next three years. Peter Sands, Executive Director of the Global Fund, spoke to Nalin Mehta on the issue:

What is your sense of progress India has made on AIDS, TB and malaria?

India is incredibly important to the global fight against AIDS, TB and malaria. On TB, India has the sad distinction of having the largest TB burden in the world – about 27%; on AIDS, it has the second largest and on malaria it’s less – about 4% – in terms of cases. If the global fight against AIDS, TB and malaria is to be won, it has to be won in India, and that is particularly the case with TB and AIDS.

On malaria, dramatic progress has been made. The latest WHO world malaria report singled out India for its progress – 24% reduction in cases in 2017 compared to 2016. But if you go back further, since 2000, the number of cases has been halved and number of deaths has come down dramatically.

On HIV, 81% of people know their status, 71% are on ARV (antiretroviral) treatment. Again, good progress but still a lot to do. We are still talking about 2.1 million people living with HIV and something like 88,000 new HIV cases a year.

TB is perhaps the greatest challenge for India with 27% of global TB cases and 33% of the global TB mortality in India. Roughly, there are about 27 million TB cases a year in India. About one million of those are not identified. There is a very high rate, relative to the rest of the world, of latent TB infection, at about 40% of the population.

Having said these, there has been a huge step up in commitment from India led from the top by Prime Minister Narendra Modi himself, with an ambition of ending TB by 2025 with the national strategic plan and significant commitment of incremental resources. India doubled its financial commitment to fight TB in this three-year cycle against the earlier one. We have been seeing the results of that coming through. For example, TB notifications in 2015 were 1.7 million and 2.15 million in 2018.

What about multidrug resistant TB?

Multidrug resistant TB is a deeply serious challenge. The world as a whole is not taking it seriously enough. This is a threat with very high fatality risk, very difficult to treat and it's pretty contagious. Worldwide we have almost 600,000 people with MDR-TB and only about a quarter of those are being treated. Also, a quarter of that is present in India. If you think in terms of health security, this is probably one of the most potent threats in India and the world.

What is the importance of India hosting the Global Fund's replenishment preparatory meeting ahead of the final replenishment conference in France in October 2019?

India is a very significant partner and it is the first time we have held one of these preparatory meetings in an implementing country as opposed to a donor country. That's important because that is where the fight is happening. We see India showing demonstrable leadership in this fight. It is also showing a domestic commitment to increase resources in the broader context of building up its health system.

How do you see the broader global debate about international aid for countries as they become higher income countries?

It's a debate that isn't susceptible to pat answers. The Global Fund is engaged with a much broader range of lower and lower-middle income countries. Countries are taking ownership and becoming wealthier and also taking responsibility for taking care of their citizens. That's the way you ultimately achieve sustainability. But it has to be done in a very planned and thoughtful way. The transition process has to be very carefully managed.

So, the transition for India is still a fair bit down the distance?

The transition as an endpoint is a fair bit down the distance. The transition as a process over time is about the government taking more ownership. That's something we think the government should take responsibility from the beginning.

How differently do you see India and China as donors?

It is a different situation. The Global Fund is not funding grants in China. China has been a relatively modest contributor to the Global Fund. In India, in our current grant cycle, we are funding about \$500 million and have put in \$2.1 billion over time. India has simultaneously been a modest donor. So, it's different, the fundamental difference being that we continue to make significant grants to India.



Open-Heart Surgery

Evaluating an Alternative to Open-Heart Surgery (News Centre: 20190318)

<https://news.feinberg.northwestern.edu/2016/05/evaluating-an-alternative-to-open-heart-surgery/>

Transcatheter aortic valve replacement (TAVR) is used to repair aortic stenosis, a condition that occurs when the aortic valve narrows, limiting blood flow to the heart.

Transcatheter aortic valve replacement (TAVR) is used to repair aortic stenosis, a condition that occurs when the aortic valve narrows, limiting blood flow to the heart.

A minimally invasive procedure to repair aortic stenosis may be preferable to open-heart surgery when treating patients at intermediate risk of surgical mortality, according to a recent observational study co-led by Northwestern Medicine investigator S. Chris Malaisrie, MD, and published in *The Lancet*.

Aortic stenosis occurs when the aortic valve narrows, limiting blood flow to the heart. It's usually caused by age-related scarring and calcium buildup in the valve cusp – a flap that opens to allow blood flow through the valve. The standard of care for aortic stenosis has been open-heart surgery to replace the damaged valve, but this treatment is too risky for some patients.

One alternative to open-heart surgery is transcatheter aortic valve replacement (TAVR), a procedure in which a collapsible replacement valve is inserted into the heart through a catheter. Previous research has shown that TAVR is safe and effective for high-risk patients. The new study evaluated this method for intermediate-risk patients.

S. Chris Malaisrie, MD, associate professor of Surgery in the Division of Cardiac Surgery, was principal investigator for the study's Northwestern site.

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“The study showed that a third generation transcatheter valve called SAPIEN 3 seemed to be superior to standard aortic valve replacement in patients with aortic stenosis who we considered to have intermediate risk of surgical mortality,” said Malaisrie, an associate professor of Surgery in the Division of Cardiac Surgery, who was principal investigator of the study's Northwestern site.

The investigators assessed 1,077 intermediate-risk patients who received TAVR at 51 sites in North America and compared their results to patients who received open-heart surgery for surgical valve replacement. A year after surgery, the patients treated with TAVR had superior outcomes, including better rates of survival, stroke incidence and re-intervention.

“Lower-risk patients now have another option for their treatment that appears to be just as good as open-heart surgery,” Malaisrie said. “In some centers, TAVR will become the favored option.”

A major benefit of TAVR is that recovery time in the hospital is just three days, compared to five days for open-heart surgery.

In a future study, Malaisrie and his colleagues plan to test TAVR in low-risk patients.

Edwards Lifesciences, the manufacturer of the SAPIEN 3 transcatheter valve, supported some of this research. Malaisrie did not receive compensation from the company for his work in the trial.

Cardiology Patient Care Research

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Health for development goals

Govt plans to increase spending on health for development goals (Hindustan: 20190318)

India's government spending on health in 2015-16 was 1.17% of the gross domestic product (GDP), according to a Union ministry report. The government wants to improve the expenditure to 2.5% by 2025 to meet Sustainable Development Goals (SDGs).

The union ministry of statistics and programme implementation (MoSPI) released the National Indicator Framework Baseline Report that includes 41 indicators to track the country's health and well-being.

The report has been developed to provide a benchmark to track the country's progress towards SDG targets at the national level till 2030. To track the progress, the period 2015-16 has been used as the baseline period.

Among primary health indicators that the government is focusing on improving in the next decade are maternal mortality ratio (MMR), which is the number of women dying per 100,000 live births, deaths of newborns and of children under 5 years, in epidemics such as AIDS, tuberculosis and malaria, and premature mortality from non-communicable diseases.

A resolution was adopted by global leaders at the 70th session of the United Nations General Assembly, including India, held in 2015 on 'Transforming our World: the 2030 Agenda for Sustainable Development', where it had adopted the SDGs.

"The target is to increase the public health expenditure in a phased manner," a senior health ministry official said, requesting anonymity, as the official isn't authorised to speak to media.

"India's health indicators are improving at a good rate. If you look at the maternal mortality ratio, India's present rate is below the Millennium Development Goal target of 139 per 100,000 live births. The country is on track to achieve the SDG target of below 70 by 2030," the official added.

To monitor the SDGs and related targets, the MoSPI has developed a National Indicator Framework (NIF) comprising 306 national indicators in consultation with central ministries, departments, states and other stakeholders.

Pills

Inactive' ingredients in most pills may cause allergic reactions: Study (The Tribune20190318)

<https://www.tribuneindia.com/news/health/-inactive-ingredients-in-most-pills-may-cause-allergic-reactions-study/744607.html>

Heat-induced heart attack risk on the rise: Study

'Inactive' ingredients in most pills may cause allergic reactions: Study

The team found that inactive ingredients can cause an adverse reaction through an allergy or an intolerance. — Thinkstock

A vast majority of the most frequently prescribed medications contain at least one ingredient capable of causing an adverse allergic reaction, a US study has found.

Known as inactive ingredients, these components are added to improve the taste, shelf-life, absorption and other characteristics of a pill, but the researchers found that more than 90 per cent of all oral medications tested contained at least one ingredient that can cause allergic or gastrointestinal symptoms in sensitive individuals.

Such ingredients include lactose, peanut oil, gluten and chemical dyes, scientists said.

"When you're a clinician, the last thing you want to do is prescribe a medication that could cause an adverse reaction or allergic reaction in a patient," said C Giovanni Traverso, from Massachusetts Institute of Technology (MIT).

"This project was inspired by a real-life incident where a patient with Celiac disease was prescribed a medication and the formulation of the pill they picked up from the pharmacy had gluten in it," Traverso said.

"We wanted to understand the problem and drill down to characterise the entire universe of inactive ingredients across thousands of drugs," he said.

Researchers analysed data on the inactive ingredients found in 42,052 oral medications that contained more than 354,597 inactive ingredients.

Inactive ingredients are defined as substances that are added to a pill's formulation but are not intended or expected to have a direct biological or therapeutic effect.

Although such ingredients have been tested for safety at the population level, scattered case reports have suggested that inactive ingredients may cause adverse reactions in individuals who have allergies or intolerances.

"There are hundreds of different versions of pills or capsules that deliver the same medication using a different combination of inactive ingredients," said Daniel Reker, a postdoctoral fellow at MIT.

"This highlights how convoluted the possible choices of inactive ingredients are, but also suggests that there is a largely untapped opportunity today to specifically select the most appropriate version of a medication for a patient with unusual sensitivities," Reker said.

The team found a total of 38 inactive ingredients that have been described in the literature to cause allergic symptoms after oral exposure.

Researchers reported that 92.8 per cent of the medications they analysed contained at least one of these inactive ingredients.

The team found that inactive ingredients can cause an adverse reaction through an allergy or an intolerance.

It is unclear what amount of an ingredient is necessary to trigger a reaction in sensitive individuals—the content of lactose in a medication, for instance, may be too low to cause a reaction in many patients, except for those with severe lactose intolerance or those taking many medications containing lactose.

"While we call these ingredients 'inactive,' in many cases, they are not. While the doses may be low, we don't know what the threshold is for individuals to react in the majority of instances," said Traverso.

"This pushes us to think about precision care and about the role for regulation and legislation when it comes to labelling medications that contain an ingredient that may cause an adverse reaction," he said. — PTI



Heat-induced heart attack

Heat-induced heart attack risk on the rise: Study (The Tribune20190318)

<https://www.tribuneindia.com/news/health/heat-induced-heart-attack-risk-on-the-rise-study/743620.html>

The study, published in the European Heart Journal, looked at more than 27,000 heart attack patients between 1987 and 2014.

There has been an increase in heat-induced heart attack risk between 2001 and 2014, a study analysing data over a period of 28 years has found.

The study, published in the European Heart Journal, looked at more than 27,000 heart attack patients between 1987 and 2014.

The average age of the patients studied was around 63 and 73 per cent were men. About 13,000 heart attacks ended in the death of the patient.

The individual heart attacks were compared with meteorological data on the day of the attack and adjusted for a range of additional factors, such as the day of the week and socioeconomic status.

"Over a period of 28 years, we found that there has been an increase in heat-induced heart attack risk in recent years," said Kai Chen, a researcher at Helmholtz Zentrum Munchen in Germany.

The researchers compared data from 1987 to 2000 with data from 2001 to 2014.

"Our analysis showed that, over the last few years, the risk of heat-induced heart attack with increasing average daily temperature has risen compared to the previous investigation period," Chen said in a statement.

Individuals with diabetes or hyperlipidaemia—a condition in which there are high levels of fat particles (lipids) in the blood—were particularly at risk.

The researchers suspect that this is partly a result of global warming, but that it is also a consequence of an increase in risk factors such as diabetes and hyperlipidaemia, which have made the population more susceptible to heat.

"Our study suggests that greater consideration should be given to high temperatures as a potential trigger for heart attacks—especially in view of climate change," said lead researcher Alexandra Schneider.

"Extreme weather events, like the 2018 heat waves in Europe, could in future result in an increase in cardiovascular disease," Schneider said.

"Our analysis suggests a lower risk in the future, but this lower risk was not significant and very cold days will continue to represent a potential trigger for heart attacks," he said.

To what extent increases in heat-related heart attacks will be counterbalanced by a decrease in cold-related heart attacks is not yet clear, researchers said.

The team is currently performing extrapolations aimed at modelling this change in risk both in scenarios where the world meets the Paris Agreement target to restrict average temperature increase between 1.5 degrees Celsius and 2 degrees Celsius and in scenarios where these targets are missed. — PTI

Early menopause

Early menopause in smokers raises bladder cancer risk (The Tribune20190318)

<https://www.tribuneindia.com/news/health/early-menopause-in-smokers-raises-bladder-cancer-risk/743609.html>

Experiencing menopause before the age of 45 is associated with a higher risk of bladder cancer particularly among smokers, says a new study.

Women who entered menopause before the age of 45 were 45 per cent more likely to have bladder cancer than those who had menopause after 50.

However, if these women had smoked, the risk of bladder cancer was 53 per cent greater than women who had menopause later, the researchers said.

"We found that smoking women who experienced menopause before they were 45 years old had a greater risk of bladder cancer. Smoking remains the most important risk factor for bladder cancer," said lead researcher Mohammad Abufaraj at the University of Vienna.

The study will be presented at the European Association of Urology congress in Barcelona.

Besides smoking as the underlying reason for the increased incidence of bladder cancer, other factors such as hormonal changes also leads to an earlier menopause, said Arnulf Stenzl, Chairman at the EAU Scientific Congress Committee.

In general, around three times more men than women get bladder cancer, but the mortality rate in women is around 40 per cent higher. Delay in diagnosis, genetic or epigenetic factors and hormonal factors could be some of the reasons for these differences.

However, the study "revealed that it is unlikely that factors such as age when periods begin, number of pregnancies, oral contraceptive use or the use of hormone replacement therapy are associated with bladder cancer risk", Abufaraj added.

For the study, the team examined health outcomes of more than 220,000 nurses. — IANS

Migraine

Brains's sodium level linked to migraine risk: Study (The Tribune: 20190318)

<https://www.tribuneindia.com/news/health/brains-s-sodium-level-linked-to-migraine-risk-study/743623.html>

A team of US researchers have found a link between migraines and how sodium is distributed through the brain, a finding that could be key for future research on treatments for millions of affected people.

Using high-powered magnets at the lab, essentially a high-powered magnetic resonance imaging and the team scanned rats' brains as they experienced migraines.

They found that there was increased sodium in the brain stem long before the rats showed any sign of having a migraine, according to the study published in the journal Pain.

"The importance of these findings is that they further emphasise the role of sodium increase early in migraines and help point to the region where migraine symptoms may be starting," said Michael Harrington director of neurosciences at Huntington Medical Research Institutes—a California-based non-profit organisation.

Previous studies have showed that migraine sufferers have significantly higher sodium concentrations in their cerebrospinal fluid than people without the condition.

Scientists have found that a number of different health scenarios seem to trigger migraines including anxiety, stress, exposure to light and hormonal changes.

According to the World Health Organisation, a large number of people with headache disorders are not diagnosed and treated—worldwide only 40 per cent of those with migraine are professionally diagnosed.

Besides the painful headache, the condition is also disabling. In the Global Burden of Disease Study, migraine was ranked as the sixth highest cause worldwide of years lost due to disability. — IANS

Migrain (The Asian Age: 20190318)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12639524>

Women suffering from MRM might experience dullness followed by mood swings and severe headaches prior to menstruation

KANIZA GARARI

THE ASIAN AGE

Migraines affect thrice the number of women as compared to men and migraines triggered by hormonal fluctuations are found to be the case in 50 per cent of the women who have reported this problem. "Migraines caused by menstruation occur two to three days before the onset of periods. Women may experience dullness followed by mood swings and then headaches. The management of the disease depends on one's ability to comply with medication and therapy. It is important to ensure that one does not develop resistance to the drugs," explained Dr V. N. Mathur, senior consultant neurologist.

Q What is the rate of the incidence of migraines? How many women in India suffer from menstrual migraines?

One in every five adults suffers from headaches. Of these, women are affected more than men. Worldwide, the incidence of migraine in women is three times more than its incidence in men. In women, hormonal changes are found to be the major cause of menstruation-related migraines (MRM). This has been understood only recently in India.

It is a highly under-reported and under-diagnosed disease because often, women consider it a part of their menstrual cycle. Studies have shown fluctuating numbers. More reporting has identified 70 per cent cases, while under-reported studies show as less as 30 per cent cases.

Q What triggers MRM?

The triggers for migraine and MRM are often the same. Its most common triggers are bright light, loud sound, strong smells, and stress, all of which are found to trigger migraine attacks as well. The other factors noted include not eating timely meals which causes glucose levels in the blood to drop. An uncommon trigger noted in 60 per cent of the women is when they opt for a head bath and then complain about headaches. In these cases, it has been noted that dry scalp can trigger headaches. These women have been advised to apply two drops of oil along the center of their scalp and massage the area gently to prevent headaches.

Q It has been found that women in their pre-menopause and menopause stages experience headaches that begin from the back of the head and move over to the front and upper body?

■ Migraines in women who consume alcohol, and suffer from hypothyroidism, obesity, and lack of exercise are treated differently. Treatment of such cases involves a change in diet and also medication. Such women need to be off alcohol, need to keep their thyroid in check and also exercise regularly to ensure that the severity of their headaches is controlled

Understanding menstruation related migraines



Why does this happen?

Moving headaches are due to low levels of estrogen and serotonin. In some women, it has been found that headaches begin at the back of the head and move down to the neck and shoulders. These cases are often misdiagnosed as cervical spondylosis. The symptoms begin three to four days prior to the onset of periods and the pain becomes severe and radiates from the head to the upper body.

Those suffering from it may experience anger and mood swings. There is also a possibility of self-harming behaviour as the pain is often unbearable. Although it is an episodic reaction, we highly recommend taking a dose of a non-steroidal anti-inflammatory drug when the symptoms begin to show. This is for those who have extremely severe headaches. There are different medications for the various kinds of headaches and it is critical that the patient is properly counselled.



Dr V. N. Mathur
senior consultant
neurologist

Q Is abuse of NSA drugs in migraines noted?

Yes, five per cent of the cases have noted overuse of NSA drugs. It becomes critical to hospitalise patients in such cases in order to flush out NSA drugs from their system, which takes the treatment to a whole new level and can put the patient to the risk of side effects from the steroids.

■ A combination of low estrogen and serotonin levels leads to menstrual migraines. Serotonin is an important neurotransmitter which regulates mood, social behaviour, appetite, digestion, sleep, memory, and sexual desire. Low serotonin levels are often hereditary, passing on from one generation to another

Q Do patients suffering from migraines require hormone replacement therapy?

A very small portion of the MRM patients, who experience very severe migraines that are resistant to treatment, will require hormone replacement therapy. PMS in such women leads to a severe dip in estrogen and serotonin levels. They may require a joint intervention by their gynaecologist and neurologist.

Q Episodes of anger, depression and severe anxiety are noted before the onset of a migraine. Is there a relationship between mood swings and migraine attacks?

Yes. However, in the clinical evaluation, we have found that only mood swings are being treated by psychiatrists. Most of these patients have untreated headaches. Such misdiagnoses often leads to the development of an untreated condition which becomes severe in these women during their pre-menopause stage. Hence, women who suffer from mood swings and menstruation-related migraines must understand that their issues are caused by an underlying neurological condition.

Q Is the treatment of migraines different at different stages of the disease?

Yes, and this is the most important aspect. Migraine in women is treated differently at different levels. Medication is prescribed according to the severity of pain and other related factors. The same individual might often show a variation in symptoms so it becomes critical to revise medication whenever required. Patients also need to understand that the overuse of drugs can cause resistance and that can become a challenge in the treatment of the migraine attacks which might occur through their pre-menopause and menopause phases.

Green tea

Green tea may cut obesity risk, other health disorders (The Tribune20190318)

<https://www.tribuneindia.com/news/health/green-tea-may-cut-obesity-risk-other-health-disorders/743101.html>

Green tea may reduce the risk of obesity and a number of inflammatory biomarkers.

Green tea may reduce the risk of obesity and a number of inflammatory biomarkers linked with poor health, a study conducted in mice suggests.

Mice fed a diet of two per cent green tea extract fared far better than those that ate a diet without it, according to the study published in the Journal of Nutritional Biochemistry.

The finding has prompted an upcoming study of green tea's potential benefits in people at high risk of diabetes and heart disease.

The benefits seen in the study appear to stem from improved gut health, including more beneficial microbes in the intestines of the mice and less permeability in the intestinal wall—a condition typically called "leaky gut" in people.

"This study provides evidence that green tea encourages the growth of good gut bacteria, and that leads to a series of benefits that significantly lower the risk of obesity," said Richard Bruno, the study's lead author and a professor at The Ohio State University in the US.

Negative changes in the gut microbiome have been previously linked to obesity, and green tea has been shown to promote healthy bacteria.

The team wanted to explore whether there was an argument for green tea preventing obesity, inflammation and other factors connected to poor metabolic health, Bruno said in a statement.

The results of studies looking at obesity management so far have been a real mixed bag.

"Some seem to support green tea for weight loss, but a lot of other research has shown no effect, likely due to the complexity of the diet relative to a number of lifestyle factors. Our goal is to figure out how it prevents weight gain," Bruno said.

"This will lead to better health recommendations," he added.

Green tea has a rich history in Asian countries and has been increasingly embraced in the West, in part for its potential health benefits.

Catechins, anti-inflammatory polyphenols found in green tea, have been linked to anti-cancer activity and lower risk of heart and liver disease.

The researchers devised an experiment that examined green tea's effects in male mice fed a normal diet and a high-fat diet designed to cause obesity.

Female mice are resistant to diet-induced obesity and insulin resistance, a precursor to diabetes, so they were not included.

For eight weeks, half of the animals ate a high-fat diet designed to lead to obesity and half were fed a regular diet. In each of those groups, half ate green tea extract mixed in with their food.

The mice fed a high-fat diet supplemented with green tea gained about 20 per cent less weight and had lower insulin resistance than mice fed an otherwise identical diet without tea.

Those mice also had less inflammation within fat tissue and the intestine.

The green tea appeared to protect against the movement of endotoxin, the toxic bacterial component, out of their guts and into the bloodstream.

The researchers found evidence of stronger—less "leaky" — guts in these mice. Leaky gut is a problem in humans that contributes to widespread low-grade inflammation and has been implicated in a number of health problems.

The researchers also found that the green tea appeared to contribute to a healthier microbial community in the guts of the mice fed a high-fat diet.

Mice fed the normal, or low-fat, diet supplemented with green tea also had benefits including reduced weight gain and lower endotoxin levels and markers of leaky gut, but these were relatively modest compared with the effects seen in mice fed the high-fat diet.

Green tea consumption in the experiment would be equivalent to about 10 cups of green tea throughout the day for a person, Bruno said.

"It might seem like a lot of tea, but it's not highly unusual in certain parts of the world," he said.

Bruno is currently working on a human study that will explore the effects of green tea on leaky gut in people with metabolic syndrome—a condition that predisposes people to Type 2 diabetes and heart disease. — PTI

Nano-bots

Soon, nano-bots may help diagnose, treat cancer (The Tribune20190318)

<https://www.tribuneindia.com/news/health/soon-nano-bots-may-help-diagnose-treat-cancer/743130.html>

The nano-bot, described in the journal *Science Robotics*, is a set of magnetic 'tweezers' that can position a nano-scale bead inside a human cell in three dimensions with unprecedented precision.

"Optical tweezers—using lasers to probe cells—is a popular approach," said Xian Wang, a PhD candidate at the University of Toronto in Canada.

The technology was honoured with 2018 Nobel Prize in Physics, but Wang said the force that it can generate is not large enough for mechanical manipulation and measurement he wanted to do.

The system Wang designed uses six magnetic coils placed in different planes around a microscope coverslip seeded with live cancer cells.

A magnetic iron bead about 700 nanometres in diameter—about 100 times smaller than the thickness of a human hair—is placed on the coverslip, where the cancer cells easily take it up inside their membranes.

Once the bead is inside, Wang controls its position using real-time feedback from confocal microscopy imaging.

He uses a computer-controlled algorithm to vary the electrical current through each of the coils, shaping the magnetic field in three dimensions and coaxing the bead into any desired position within the cell.

“We can exert forces an order of magnitude higher than would be possible with lasers,” said Wang.

In collaboration with Helen McNeil and Yonit Tsatskis at Mount Sinai Hospital in the US and colleagues, the team used the robotic system to study early-stage and later-stage bladder cancer cells.

Previous studies on cell nuclei required their extraction from cells. The researchers measured cell nuclei in intact cells without the need to break apart the cell membrane or cytoskeleton.

They were able to show that the nucleus is not equally stiff in all directions.

The researchers also measured exactly how much stiffer the nucleus got when prodded repeatedly, and determine which cell protein or proteins may play a role in controlling this response.

This knowledge could point the way toward new methods of diagnosing cancer, researchers said.

“We know that in the later-stage cells, the stiffening response is not as strong,” said Wang.

“In situations where early-stage cancer cells and later-stage cells don’t look very different morphologically, this provides another way of telling them apart,” he said.

“You could imagine bringing in whole swarms of these nano-bots, and using them to either starve a tumour by blocking the blood vessels into the tumour, or destroy it directly via mechanical ablation,” said Professor Yu Sun from the University of Toronto.

“This would offer a way to treat cancers that are resistant to chemotherapy, radiotherapy and immunotherapy,” Sun said. PTI

Air pollution

Air pollution raises diabetes risk in China (The Tribune: 20190318)

<https://www.tribuneindia.com/news/health/air-pollution-raises-diabetes-risk-in-china/742581.html>

Photo for representational purpose only.

Long-term exposure to harmful smog particles increases the risk of diabetes, a new study in China has shown, providing evidence for a link between the country's air pollution and the disease.

China is facing the largest diabetes problem in the world with around 11 per cent of its population suffering from the metabolic illness, according to a United States study published in 2017.

Increased prosperity has brought changing diets and lifestyles, along with an air pollution crisis that the World Health Organization estimates causes over a million premature deaths every year.

The risk of diabetes rose by about 16 percent for an increase of 10 microgrammes per cubic metre in long-term PM2.5 particle exposure, researchers from Fuwai Hospital in Beijing and Emory University in the US found in a study published online by Environment International last week.

"Sustained improvement of air quality will help decrease the diabetes epidemic in China," Lu Xiangfeng, one of the study's authors, told AFP in an email.

Researchers collected data from over 88,000 subjects across 15 provinces, estimating their exposure to PM2.5 based on satellite data from 2004 to 2015.

PM2.5 includes toxins like sulfate and black carbon, which can penetrate deep into the lungs or cardiovascular system, and have been linked to higher rates of lung cancer, chronic bronchitis and heart disease.

While similar studies in North America, Europe, Hong Kong and Taiwan have linked air pollution with diabetes, researchers say this is the largest study of its kind in mainland China.

"Due to high levels of PM2.5, different exposure pattern and population susceptibility, results from developed countries with low PM2.5 levels were not applicable in China," Lu said.

His team adjusted for factors such as age, body mass index, smoking status, family history of diabetes and work-related physical activity levels, but did not directly factor in dietary habits and other types of pollutants.

Ho Kin-fai, a professor at the Chinese University in Hong Kong who studies air pollutants and is not involved in the study, told AFP the study shows air pollution is a factor in the diabetes epidemic "that we cannot ignore".

But scientists still need to find evidence showing how PM2.5 particles work in the human body to increase risk of the disease,” Ho said.

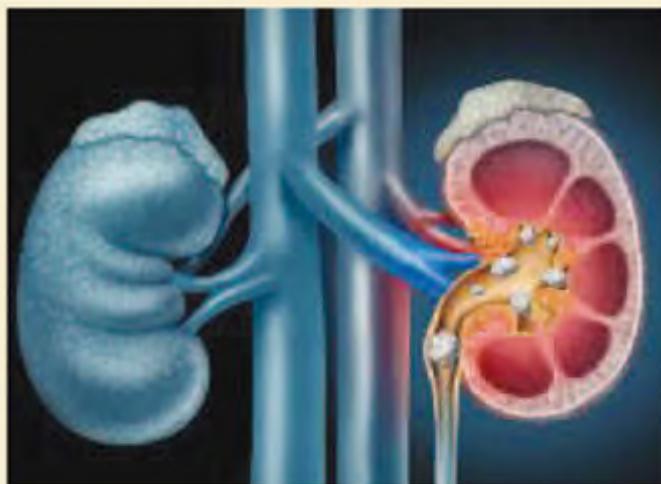
Ho said the study excludes “some other factors in the environment that maybe we haven’t considered ... so that’s why we need to have more evidence from the biological mechanism to prove it’s true.”

Diabetes is a growing public health problem throughout the world, killing an estimated 1.6 million people in 2016, according to the WHO, which says the problem is increasing more rapidly in low and middle-income countries. — AFP

Kidney Stone (The Asian Age: 20190318)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12639523>

Ask a doc



KIDNEY STONE MAY LEAD TO CONSTIPATION

Q *I had a stone removed from my left kidney six months ago. Recently, I began to experience pain in my right kidney and upon getting it tested, I discovered a 6.5 mm stone in it. What do you recommend that I do?*

— Anonymous

A stone may cause pain in your stomach and abdominal region. However, you need to get it removed as soon as it comes to your notice because otherwise, it can hinder excretion and may lead to constipation. You can try home remedies like drinking lots of water but if that does not work, then you must consult your doctor.

Dr P. Vamshi Krishna,
consultant urologist

Q *My 49-year-old wife has been suffering from diabetes for the past 14 years. She was taking Glucored Forte and Glyciphage tablets twice daily. Her fasting blood sugar level is 200 mg/dl and PP is 250 mg/dl. We consulted a doctor, who prescribed Triglycomet to be taken twice a day. After taking the medication, her blood sugar level was under*

Diabetic

Double trouble (The Hindu: 20190318)

<https://www.thehindu.com/sci-tech/health/rx/double-trouble/article4076944.ece>

Did you know that there is a link between diabetes and tuberculosis? Read on.

What is the extent of diabetes in India?

India ranks second, next to China, for the highest number of people living with diabetes. Apart from certain genetic predispositions, other factors such as unhealthy eating habits, physical inactivity, sedentary lifestyle and stress are added reasons for an expanding diabetic population.

Why is TB common among diabetics?

People with diabetes are prone to develop complications of the heart, eyes, kidney and foot. In addition, they are more likely to acquire infections as their immune system is compromised due to fluctuations in blood glucose levels. The ability to fight against infections is comparatively lower in diabetics. India has a huge burden of tuberculosis. Moreover, the number of people with latent TB infection is also high. Ten out of 100 people with latent TB infection develop the active form of TB during their lifetime; whereas diabetic patients with latent TB infection are three times more likely to develop active TB. The increasing number of diabetics in India indirectly increases the number of people with active TB, facilitating the persistence of TB in the community.

Does TB relapse in diabetics?

Recent studies on patients with TB and Diabetes Mellitus (DM) also showed that diabetes facilitates the reactivation of TB in people who have already completed the treatment. The increased blood glucose levels over a period impair the defensive mechanism essential to fight against the invading bacteria/viruses.

How many TB patients have diabetes and pre-diabetes?

A recent study among TB patients showed that people with diabetes and pulmonary TB are more likely to have sputum positive or the infectious form. About one fourth of TB patients had diabetes and another one fourth were in the pre-diabetes stage; half had abnormal blood sugar levels. Hence the dual burden of TB and diabetes poses a great challenge to control both communicable and non communicable diseases.

What is the most important step to address this double burden?

It is necessary to unmask undiagnosed diabetes among TB patients; so it is important to screen all TB patients for diabetes. TB patients diagnosed with diabetes and already under treatment for that have to be monitored carefully for blood glucose control. It helps to control both diseases effectively.

How does a DM patient exhibit TB symptoms?

Diabetes may also influence the way that TB can present. Diabetic patients may or may not have the common symptoms of TB such as cough, evening rise of temperature, loss of weight, loss of appetite and night sweating. The radiological picture in chest x-rays may also not be the same as that of patients with only TB. A routine screening for TB symptoms in people treated in diabetes clinics along with the screening for other complications is also important. Those who present with TB symptoms such as persistent cough for more than 10 days and not responding to antibiotics must undergo sputum tests or chest x-rays to rule out TB.

Are there any special steps to control both diseases?

TB patients are more likely to develop uncontrolled blood sugar due to the chronic infectious stage. Monitoring blood sugar values and adjusting the diabetic drug/dose with an expert's advice is very important. If diabetic patients without complications are diagnosed with TB and start treatment, a screening for complications of diabetes should be done at the end of TB treatment. When diabetic patients with complications are put on TB treatment, a close monitoring is needed to prevent any untoward events. It is necessary to get dietary advice to improve protein content of the total daily intake if the calorie consumption is adequate. A well balanced diet with essential vitamins and minerals is generally recommended. Once TB treatment is started and patient gets some relief, a moderate level of physical activity can be maintained.

What is expected from a patient with both TB and DM?

It is a great challenge to manage both the diseases, as it needs the full cooperation of the patients, both in terms of taking prescribed medicines for both diseases and monitoring. The general public should be aware of the possibility of coexistence of the two diseases, particularly the high risk group i.e. those who are being treated for either one.

E-cigarettes

E-cigarettes can cause poisoning: Study (The Times of India: 20190318)

<https://timesofindia.indiatimes.com/india/e-cigarettes-can-cause-poisoning-study/articleshow/68456765.cms>

Electronic Nicotine Delivery Systems (ENDS) can cause poisoning, a government panel has said, adding another stroke of approval to the health ministry's advisory to states asking them to ban products such as e-cigarettes, Vape, e-Sheesha, e-Hookah etc.

There is already mounting evidence to prove that e-cigarettes and its variants are harmful and may be as bad as any another tobacco product in terms of causing premature deaths and morbidity, the panel's report submitted to the health ministry recently said.

The committee analysed 251 studies and reports to arrive at its conclusion. It said ingredients used in ENDS were harmful and added to the toxicity of the product. Moreover, the advertising strategy used to market them - as a harm-reduction product and glamorous product targeted at adolescents - only added to the problem, the panel said. It noted that ENDS could not be used as a cessation device.

The committee included doctors from AIIMS, National Centre for Disease Informatics and Research and other public health organisations. The report assumes significance because ENDS producers have argued so far that there is no scientific evidence to show these products are harmful for health.

ENDS are devices that heat a solution to create an aerosol, which frequently contains flavours, usually dissolved into propylene glycol and glycerin. Electronic cigarettes or e-cigarettes, the most common prototype, are devices that do not burn or use tobacco leaves but instead vaporise a solution, which a user then inhales.

Experts say nicotine - a chief constituent of ENDS - is addictive and may lead to cardiovascular diseases, lung diseases, adverse effects on the immune and gastrointestinal systems, risk of miscarriage in pregnant women etc.

TOP COMMENT

If you get a reputable eLiquid with no chemicals like diacetyl and others, you should be fine. The tobacco companies are rallying hard to get the ecigs banned.

Daddy D

In August, the health ministry had issued an advisory to states asking them to ban sale, manufacturing, distribution, import and advertisement of ENDS. So far, 36 countries around the world and 12 states in India have banned the sale of e-cigarettes. However, its variants are still available in most states of India.

Recently, the central drug regulator had directed all drug controllers in states and Union Territories to not allow the manufacture, sale, import and advertisement of ENDS, including e-cigarettes and flavoured hookah.

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MCI amends controversial rule on disabled doctors

MCI amends controversial rule on disabled doctors (The Times of India: 20190318)

<https://timesofindia.indiatimes.com/india/mci-amends-controversial-rule-on-disabled-doctors/articleshow/68456756.cms>

Following reports of some MBBS doctors with high levels of locomotor disability being denied permission to pursue post-graduate courses, the Medical Council of India (MCI) has amended its guidelines to say that such candidates could be admitted based on a case by case assessment of "functional competency" with the aid of assistive devices.

Before this notification, many students with locomotor disability who had cleared NEET were subjected to the humiliation of undergoing assessment without assistive devices, like being asked to walk without crutches.

The amendment notification stated that those who were earlier declared ineligible due to disability level being assessed as more than 90% will have to appear for a reassessment. "Currently, the registration phase is on. Choice filling will start from March 19. The candidates will need their eligibility certificates only for the reporting phase, which is from March 27 to April 3. So there is plenty of time for them to get reassessed," said a health ministry official.

TOI had reported earlier about an MBBS doctor being declared as having over 90% disability after the medical board in Safdarjung Hospital made him walk without his crutches.

Yet another candidate from Rajasthan had to travel to Delhi as there were only four assessment centres in the four metros. A flood of such complaints has led to MCI expanding the number of assessment centres to 10. Of the 79,633 doctors who cleared NEET this year, 215 had disabilities. Though these doctors had already demonstrated their capability by completing the MBBS course, they were subjected to reassessment to determine if they are eligible to study further.

Loneliness

Loneliness is bad for your health, this app may help (The Times of India: 20190318)

<https://timesofindia.indiatimes.com/home/science/loneliness-is-bad-for-your-health-this-app-may-help/articleshow/68458829.cms>

Adults who spend just 20 minutes a day using a smartphone mindfulness training app may feel less lonely and have more social interactions than people who don't, a small experiment suggests.

While mindfulness training has long been linked to reductions in social isolation, much of this research has focused on longer in-person sessions that continue over several weeks or months. With its focus on brief digital training sessions, the current study suggests that group sessions and the social contact that comes from in-person meetings may not be required for people to benefit from mindfulness interventions, said lead author Emily Lindsay, a psychology researcher at the University of Pittsburgh.

"Smartphone training is accessible and inexpensive," said Lindsay, who did the study while at Carnegie Mellon University in Pittsburgh, said by email.

Mindfulness-based training programmes are designed to help people focus on the present moment and accept any pain or discomfort they may be feeling.

In the study, the goal of mindfulness training was to help participants accept discomfort with social interactions while continuing to engage with other people.

The researchers randomly assigned 153 adults to one of three 14-day smartphone-based interventions developed in collaboration with one of their colleagues, Shinzen Young, based on his Unified Mindfulness system.

For 20 minutes each day, one mindfulness training group received training in monitoring and acceptance skills, a second mindfulness group received training in monitoring skills only, and a third group received no mindfulness content and instead received guidance in common coping techniques.

Participants who received training in monitoring and acceptance skills saw the greatest benefits: they reduced daily life loneliness by 22% and increased social contact by an average of two interactions each day.

One limitation of the study is that researchers didn't specifically test the smartphone mindfulness app in lonely or socially isolated adults; people were stressed, but not necessarily suffering from these other problems.

Kidney Transplant

की नहीं पड़ेगी जरूरत अब किडनी ट्रांसप्लांट (Hindustan: 20190318)

http://epaper.livehindustan.com/imageview_161610_100369136_4_1_18-03-2019_i_18.pagezoomsinwindows.php

की नहीं पड़ेगी जरूरत



सेहत

वाशिंगटन | एजेंसी

वैज्ञानिकों के अनुसार थेराप्यूटिक कोशिकाओं की मदद से किडनी की क्षतिग्रस्त कोशिकाओं की मरम्मत की जा सकेगी। इससे किडनी संबंधी घातक बीमारियों का आसानी से इलाज किया जा सकेगा और किडनी ट्रांसप्लांट की जरूरत नहीं पड़ेगी।

स्टेम सेल में प्रारूप बदलने के गुण:

अमेरिका के वेक फॉरेस्ट इंस्टीट्यूट फॉर रेजेनेरेटिव मेडिसिन के शोधकर्ता जेम्स जे यो ने बताया, हमारे शोध में पाया गया कि इस तरह के स्टेम सेल किडनी को दोबारा क्रियाशील बनाने के लिए उसकी मरम्मत करेंगे।

उन्होंने बताया कि इन स्टेम सेल में अपना प्रारूप बदलने के गुण हैं। यह सृजन को कम करती है और नई

सफल रहा प्रयोग

पत्रिका टिश्यू इंजीनियरिंग पार्ट ए में प्रकाशित शोध के अनुसार शोध के दौरान एमिनोटिक स्टेम सेल को एक बीमार किडनी में इंजेक्ट किया गया। 10 हफ्तों बाद किडनी में बेहतर सुधार देखा गया। बायोप्सी में पाया कि स्टेम सेल ने क्षतिग्रस्त कोशिकाओं को पुर्नजीवित कर दिया। शोधकर्ताओं का दावा है कि चिकित्सा के क्षेत्र में यह शोध बहुत अधिक महत्वपूर्ण साबित होगी।

कोशिकाओं को पनपने में मदद करती हैं।

कोई खतरा नहीं : वैज्ञानिकों के अनुसार इस स्टेम सेल को इस्तेमाल करने में कोई खतरा नहीं है, क्योंकि यह शरीर की रोग प्रतिरोधक क्षमता को उकसाती नहीं है। साथ ही यह किसी तरह के ट्यूमर को पनपने का बढ़ावा भी नहीं देती है।

White Skin

सफेद दाग से कुछ हफ्तों में ही मिल जाएगी छुट्टी (Hindustan: 20190318)

https://epaper.jagran.com/epaper/article-18-Mar-2019-edition-delhi-city-page_12-7891-11114-4.html

वैज्ञानिकों ने सफेद दाग यानी विटिलिगो के इलाज की ऐसी पद्धति विकसित की है जिसकी मदद से कुछ ही हफ्तों में इसे ठीक करना संभव होगा। सफेद दाग एक त्वचा रोग है, जिसमें त्वचा में रंग की वजह बनने वाली कोशिकाएं काम करना बंद कर देती हैं। इसलिए शरीर पर सफेद चकत्ते पड़ जाते हैं।

अमेरिका की यूनिवर्सिटी ऑफ मैसाचुसेट्स के शोधकर्ता जॉन हैरिस ने बताया कि अभी इसके इलाज में एक से दो साल का वक्त लग जाता है। कई बार इलाज रोकने के सालभर बाद फिर उसी जगह दाग दिखने लगते हैं। दोबारा उसी जगह दाग इसलिए बनते हैं, क्योंकि त्वचा की कोशिकाओं को यह याद रहता है कि पहले किस जगह पर दाग थे। अब वैज्ञानिकों ने उन कोशिकाओं को पहचानने में सफलता पाई है, जो इस याद को संभालकर रखती हैं। वैज्ञानिकों का कहना है कि इन कोशिकाओं को निष्क्रिय करने से सफेद दाग का इलाज जल्दी हो सकेगा।- प्रेटर