



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
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जलवायु परिवर्तन

2021 में 50 लाख भारतीय घर छोड़ने को हुए मजबूर, UN ने बताई जलवायु परिवर्तन के प्रकोप की हकीकत (Hindustan: 20220617)

<https://www.livehindustan.com/national/story-un-report-five-million-people-displaced-climate-change-disasters-india-6652223.html>

रिपोर्ट में कहा गया कि 2021 में आपदाओं के कारण विश्व में 2.37 करोड़ लोग अपने ही देश में अपना घर छोड़ने को मजबूर हुए। यह संख्या उससे पिछले साल की तुलना में 70 लाख या 23 प्रतिशत कम है।

2021 में 50 लाख भारतीय घर छोड़ने को हुए मजबूर, UN ने बताई जलवायु परिवर्तन के प्रकोप की हकीकत

2021 में जलवायु परिवर्तन और आपदाओं के कारण भारत में करीब 50 लाख लोगों को अपना घर छोड़कर विस्थापित होना पड़ा। संयुक्त राष्ट्र की एक ताजा रिपोर्ट में यह दावा किया गया है। 'यूएन रिफ्यूजी एजेंसी' (यूएनएचसीआर) की वार्षिक 'ग्लोबल ट्रेंड्स रिपोर्ट' के अनुसार पिछले साल वैश्विक स्तर पर 10 करोड़ लोग अपना घर छोड़ने को मजबूर हुए। इसके लिए हिंसा, मानवाधिकारों के हनन, खाद्य असुरक्षा, जलवायु संकट, यूक्रेन में युद्ध और अफ्रीका से अफगानिस्तान तक अन्य आपात स्थितियां जिम्मेदार हैं।

रिपोर्ट में कहा गया, आंतरिक विस्थापन निगरानी केंद्र (आईडीएमसी) के अनुसार 2021 में आपदाओं के कारण विश्व में 2.37 करोड़ लोग अपने ही देश में अपना घर छोड़ने को मजबूर हुए। यह संख्या उससे पिछले साल की तुलना में 70 लाख या 23 प्रतिशत कम है। ये मामले संघर्ष व हिंसा के कारण आंतरिक रूप से विस्थापित (देश की सीमा से बाहर नहीं जाने वाले) लोगों के अतिरिक्त हैं।

चीन में सबसे अधिक 60 लाख लोग हुए विस्थापित

रिपोर्ट के अनुसार, "2021 में आपदाओं के कारण चीन में सबसे अधिक 60 लाख लोग, फिलीपीन के 57 लाख और भारत में 49 लाख लोग विस्थापित हुए। इसमें से अधिकतर लोगों ने आपदा के कारण अस्थायी तौर ही अपने घर छोड़े थे। देश में ही आंतरिक रूप से विस्थापित हुए अधिकतर लोग अपने गृह क्षेत्रों में लौट आए हैं, लेकिन साल के अंत तक दुनियाभर में आपदाओं के कारण विस्थापित हुए 59 लाख लोग अब भी अपने घर नहीं लौट पाए थे।"

संयुक्त राष्ट्र की एजेंसी ने कहा कि पिछले एक दशक में हर साल अपने घर छोड़ने के लिए मजबूर होने वाले लोगों की संख्या में वृद्धि हुई। 2021 के अंत तक युद्ध, हिंसा, उत्पीड़न और मानवाधिकारों के हनन के कारण विस्थापित हुए लोगों की संख्या 8.93 करोड़ थी, जो एक साल पहले की तुलना में आठ प्रतिशत अधिक और 10 साल पहले के आंकड़े से दोगुने से भी अधिक है।

कोरोना

कोरोना की रफ्तार बढ़ती ही जा रही; बीते दिन 12800 से ज्यादा केस मिले, 14 मरीजों की मौत (Hindustan: 20220617)

<https://www.livehindustan.com/national/story-corona-virus-cases-daily-report-death-toll-active-positive-negative-covid-updates-6652123.html>

बीते दिन 12,847 नए केस दर्ज हुए और 14 मरीजों की मौत हुई। गुरुवार को 7,985 मरीज कोविड-19 को मात देकर रिकवर हुए। अब तक 4,26,82,697 लोग रिकवर हो चुके हैं। फिलहाल रिकवरी रेट 98.64% है।

देश में कोरोना वायरस के संक्रमण ने एक बार फिर से रफ्तार पकड़ ली है। बीते दिन 12,847 नए केस दर्ज हुए और 14 मरीजों की मौत हुई। गुरुवार को 7,985 मरीज कोविड-19 को मात देकर रिकवर हुए। अब तक 4,26,82,697 लोग रिकवर हो चुके हैं। फिलहाल रिकवरी रेट 98.64% है।

इस समय कोविड के 63,063 एक्टिव केस हैं, जिसकी दर 0.15% है। डेली पॉजिटिविटी रेट 2.47% और वीकली पॉजिटिविटी रेट 2.41% है। बीते दिन 5,19,903 कोरोना टेस्ट हुए। अब तक 85.69 करोड़ टेस्ट हो चुके हैं। देश भर में कोरोना वायरस के खिलाफ टीकाकरण अभियान जारी है। अब तक 195.84 करोड़ वैक्सीन डोज लगाई जा चुकी हैं।

महाराष्ट्र में बीते दिन कोरोना के 4,255 नए केस मिले

महाराष्ट्र में गुरुवार को कोरोना वायरस संक्रमण के 4,255 नए मामले दर्ज किए, जबकि तीन संक्रमितों की मौत हो गई। राज्य में 12 फरवरी के बाद से एक दिन में आए, यह सर्वाधिक मामले हैं। एक दिन पहले, राज्य में कोरोना वायरस संक्रमण के 4,024 नए मामले दर्ज किए गए थे और दो मरीजों ने दम तोड़ दिया था। यहां कोविड-19 के 20,634 उपचाराधीन मरीज हैं। 12 फरवरी को राज्य में 4,359 कोविड-19 के मामले दर्ज किए थे।

दिल्ली में गुरुवार को कोविड-19 के 1,323 नए मामले सामने आए और दो मरीजों की मौत हुई जबकि संक्रमण दर 6.69 प्रतिशत रही। यह लगातार दूसरा दिन है जब दिल्ली में कोविड-19 के दैनिक नए मामलों की संख्या 1300 से अधिक दर्ज की गई है, जबकि लगातार तीसरे दिन एक हजार से अधिक नए मामले सामने आए हैं। अब संक्रमितों की कुल संख्या बढ़कर 19,17,228 हो गई है। वहीं दो मरीजों की मौत होने से मृतकों की कुल तादाद बढ़कर 26,225 हो गई।

Weight

Do women find it more difficult to lose weight as compared to men? (The Indian Express: 20220616)

<https://indianexpress.com/article/lifestyle/health/women-difficulty-weight-loss-men-body-fat-7965527/>

According to nutritionist Bhakti Kapoor, there may be several reasons why a woman may be struggling to shed a few kilos; find out

Weight loss, as a topic, has many layers to it, having to do with a person's health, lifestyle choices, discipline, and often, their gender as well. It could be true that women may find it more challenging than men to lose weight. Why is it so?

According to nutritionist Bhakti Kapoor, there are several reasons why a woman may be struggling to shed a few kilos, while a man may seem to do it effortlessly. It has to do with three factors that Kapoor describes in an Instagram post.

They are:

1. Low testosterone: Having low testosterone makes losing weight difficult. The progress of men who received testosterone replacement injections was tracked for 11 years for a study, she explains, adding that those who did, lost an average of 20 per cent of their body weight.
2. Body composition: Men have more lean mass than women, and women have more fat mass than men. Men are more likely to accumulate adipose tissue around the trunk and abdomen, whereas women's adipose tissue is typically found around the hips and thighs.
3. Hormonal fluctuations: Hormones are responsible for a variety of important functions in the body, including our ability to maintain muscle mass, lose body fat, and cope with stress and hunger. As a result, when a hormonal imbalance occurs, losing weight becomes much more difficult.

“Women do have larger fat stores than men, but this is due to their physiology, not extra weight. So, just because a woman has 11 per cent more body fat than a man doesn't mean she's 11 per cent ‘fatter’,” she writes, adding that even if a woman is “in perfect physical condition”, she will have “6 to 11 per cent more body fat than a man”.

Stroke

‘Protective filters during heart valve replacement reduces risk of stroke’ (The Hindu: 20220617)

<https://www.thehindu.com/news/national/tamil-nadu/protective-filters-during-heart-valve-replacement-reduces-risk-of-stroke/article65533853.ece?homepage=true>

Octogenarian with severe co-morbidities and rare heart anatomy treated

An 89-year-old man with a rare heart anatomy recently underwent a heart valve replacement procedure. His surgeon chose to use a filter to protect him from suffering a stroke following the procedure.

G. Sengottuvelu, senior consultant and intervention cardiologist at Apollo Hospital, opted for transcatheter aortic valve implantation (TAVI) procedure as the patient had several co-morbidities that involved his liver, lung and kidney. The patient presented with bovine arch which added to the complication. Normally, the aortic arch will branch into three vessels. In the patient, the carotid artery had branched from one of the vessels instead of from the aorta, making it more challenging, Dr. Sengottuvelu said.

The patient had undergone an aortic valve replacement in 2006 that had since failed.

“When we do TAVI we have to pass through the main aorta. In the elderly, the valve is already degenerated, calcified and the valve would have thickened. When we deploy a stent there is a chance that it will scrape the blood vessel and some material will move through the blood stream. Very commonly they go to the brain and cause stroke,” he said.

Dr. Sengottuvelu decided to use a new filter that had recently been introduced in India from the U.S. The FDA-approved filter is placed in the blood vessels that go to the brain during the procedure, thus reducing chances of clinical and asymptomatic stroke.

The specialist said recent studies estimated approximately 3% to 6% of patients experienced a clinically apparent stroke within 30 days of TAVI or transcatheter aortic valve replacement.

According to him, though normally the filter helped block 90% of the particles, the patient’s rare anatomy ensured that filters were placed in all the vessels carrying blood to the brain and thus achieve complete prevention of particles entering the blood stream in the brain and the risk of embolism resulting in stroke.

The cost of the procedure would depend on the type of valve used while the use of filter would increase the cost by an additional ₹3 lakh, Dr. Sengottuvelu added.

Stroke recovery: How an existing drug may help the brain repair itself (Medical News Today: 20220617)

<https://www.medicalnewstoday.com/articles/stroke-recovery-how-an-existing-drug-may-help-the-brain-repair-itself>

New research in mice shows how doctors may be able to use an anticonvulsive drug to help the brain heal.

The brain can often find new ways to route signals around damaged areas to restore lost function.

A new study in mice finds that administering a common drug soon after a neurological event can help the brain successfully rewire itself.

If further research validates the study's conclusions, physicians may have a new tool for preventing permanent stroke damage.

Dr. Andrea Tedeschi, assistant professor in the Department of Neuroscience at Ohio State University Medical Center, explained to Medical News Today why the concept of "brain plasticity" is so important when it comes to understanding brain health:

"Brain plasticity' refers to the innate, or intrinsic, ability to compensate for a lack of functioning areas by, in principle, rewiring spare areas of the nervous system. And it's something that is really amazing if you think about it because it allows us to repair the nervous system under certain conditions."

Dr. Tedeschi is the corresponding author of a new study in mice that investigates the use of an existing drug to help the brain repair itself after an ischemic strokeTrusted Source.

The study found that administering gabapentin, an anticonvulsive medication, soon after a stroke helps the brain more effectively work around damaged areas.

Dr. Tedeschi explained: "I think that the way that the drug is [commonly] being prescribed, it's to deal with the consequences of [...] maladaptive changes [that] are now intrinsically wired into the system. So prescribing the drug if [the patients] have some sort of pain or [problematic] excitability of a certain part of the brain [...] it's not going to wipe [it] out."

By contrast, "[t]he way we intend to use it," Dr. Tedeschi said, "it's more or less as a prophylactic type of drug."

"Administering this class of drugs in an earlier phase, when the system has not yet committed to a maladaptive route, then I think it's really increasing the chances of something that we call an adaptive response."

The study appears in BRAIN.

Suppressing excitability

Gabapentin blocks two proteins, alpha-2 delta-1 and alpha-2 delta-2. Unchecked, these two proteins normally increase after an event such as a stroke or brain injury, inhibiting the brain's ability to re-route lost function.

According to previous research by the same team, gabapentin blockade of alpha-2 delta-1 and alpha-2 delta-2 can prevent their normal inhibitory function, effectively lifting the brakes and enabling nerves to grow and regenerate lost function.

The brain "needs these subunits to be there," said Dr. Tedeschi, but after a stroke, "they're setting up the stage to create more excitability across the large area of the neural network and this contributes to the establishment of detrimental conditions."

"Most of the time," he said, "what we see is that under conditions where there is some form of plasticity, excitability of networks tends to be suppressed."

When a neuron is hyperexcitable, it responds to a lower-than-normal stimulus threshold.

Dr. Tedeschi provided an example: "If you put your hands on a hard surface, you're not supposed to feel pain because you feel like there is a hard surface under your hand. If somehow the signal now is miswired and there is hyperexcitability of the group of neurons that are controlling this mechanical sensation, this information is perceived as a painful stimulus."

"When there is out-of-control neuronal excitability, then these neurons will respond to a very light, very low threshold input and that can cause muscle contraction even when you don't want it," said Dr. Tedeschi.

Spontaneous seizures, pain, and muscle spasms are causally linked to hyperexcitability.

Sensory-motor strokes in mouse models

The researchers induced ischemic stroke changes in the sensory-motor cortex of male and female mice using a photothrombotic stroke technique [Trusted Source](#).

For the mice in the 6-week study who received daily gabapentin, the researchers saw a significant recovery of motor control by the end of the study period.

Encouragingly, 2 weeks after treatment with gabapentin ceased, the mice retained that degree of improvement. The untreated mice did not recover motor control to the same extent.

As to whether the recovery of this degree of motor control was the extent of improvement mice may experience after gabapentin, Dr. Tedeschi noted with optimism:

"Yeah, certainly there's going to be more beneficial effect than what we discover. And this is actually a work in progress. We are trying to dig deeper, and on a daily basis, we are actually

discovering new things. This is something that unfortunately, I'm not allowed to discuss, but certainly, there are going to be follow-up studies. Pretty much like every week, we learn new things about the action of these drugs."

Much more to investigate

Not all of gabapentin's effects are positive, Dr. Tedeschi cautioned, meaning that there will likely be situations in which gabapentin would not be indicated.

Dr. Michael W. O'Dell, professor of clinical rehabilitation medicine at Weill Cornell Medicine in New York City, who was not involved in the study, told MNT: "There are always limitations in translating basic science, animal studies to humans, but in so much as this is a well-conducted study it does provide additional insights into the potential of pharmacological enhancement of brain plasticity in humans following stroke."

"It should be pointed out, however, that in practice, in well-designed, larger clinical trials, there has not been a great deal of success in this area," he noted.

"From a clinical standpoint," Dr. O'Dell, added, "the fact that gabapentin is a widely available, inexpensive, and relative safe drug is an encouraging aspect of this study should the finding translate to any degree to a human population."

Cancer

New cancer vaccine finds way to overcome tumor defences (Medical News Today: 20220617)

<https://www.medicalnewstoday.com/articles/new-cancer-vaccine-finds-way-to-overcome-tumor-defenses>

Scientists have been testing vaccines in their latest efforts to treat cancer. Melanie Kintz/Stocksy

Researchers have developed a new vaccine that shows promise in overriding an immune escape mechanism in cancerous tumors.

They found that the vaccine offers protection against cancerous tumors in mouse and primate cancer models.

They plan to enter the vaccine into clinical trials next year.

Developing cancer vaccines have been an essential part of cancer research for almost three decades.

Many forms of cancer vaccines are under research, including those that target proteins expressed across multiple cancer types, and those that are personalized according to individual tumor mutations.

While existing vaccines can induce an immune response in blood, tumors often dodge this response via an immune escape mechanism.

Targeting this mechanism may help researchers improve cancer vaccine efficacy.

In a recent study, researchers developed a new cancer vaccine that targets this immune escape mechanism and increases immune antibody levels.

The study was published in *Nature*.

How the vaccine works

Dr. Santosh Kesari, director of neuro-oncology at Providence Saint John's Health Center, chair of the Department of Translational Neurosciences and Neurotherapeutics at Saint John's Cancer Institute in Santa Monica, CA, and regional medical director for the Research Clinical Institute of Providence Southern California, who was not involved in the study, explained to Medical News Today how the vaccine worked.

“This new approach [t]argets this resistance mechanism by making a vaccine to a general protein that is over expressed (a stress signal) in cancers but is rapidly removed by the cancer before the immune system detects it.”

— Dr. Santosh Kesari

“The new vaccine approach prevents the cancer cell from removing this cancer-specific protein and thus allows a coordinated immune attack on the cancer by both T- cells and natural killer (NK) cells,” he said.

The researchers designed the new vaccine to target MICA and MICB stress proteins, which sit on the surface of cancer cells.

While immune cells in the body, known as T cells and NK cells, typically bind to these stress proteins in an attempt to kill cancerous cells, tumor cells can evade their attack by slicing MICA/B and shedding them.

The new vaccine prevents this slicing and thus increases stress protein expression and the activation of a dual attack from T cells and NK cells.

Tests on mice, monkeys

To begin, the researchers administered their new vaccine to mouse models of cancer that were modified to express human MICA/B proteins.

They found that the vaccines increased antibody levels in the mice, and demonstrated anti-tumor effects.

The researchers then evaluated immunological memory from the vaccine. Four months after initial immunization, the researchers exposed mice to tumor cells and found that they remained fully protected.

The researchers also found that introducing small quantities of blood from vaccinated mice inhibited cell-surface MICA/B protein shedding on human and mouse cancer cell lines.

The researchers further noted that the vaccine was effective in controlling multiple tumor types.

The researchers next investigated whether the vaccine could prevent cancer recurrence following surgical tumor removal.

To do so, they immunized mouse models of breast cancer and melanoma with a high chance of recurrence after tumor removal with either the new vaccine or a control vaccine.

They found that, compared to the control vaccine, the new vaccine reduced the number of lung metastases detected in both cancer models more than a month after surgery.

The researchers next tested the vaccine on four rhesus macaques (commonly known as rhesus monkeys). They noted that the vaccine increased antibody levels by 100- 1,000 fold with subsequent booster vaccines.

They reported no clinical side effects or changes in blood chemistry following immunization, which, they wrote, suggests preliminary evidence for vaccine safety.

The researchers concluded that their new vaccine enables protective immunity against tumors with common escape mutations.

Human trials up next

The researchers noted that their results might be limited as they had to express human MICA/B proteins in mouse tumor cells due to differences in mouse and human cellular biology.

When asked what the future holds for research around the vaccine, Dr. Kai W. Wucherpfennig, chair of cancer immunology and virology at the Dana-Farber Cancer Institute and lead author of the study, told MNT that they plan to enter the vaccine into clinical trials next year.

The researchers added that the vaccine might also be used in combination with local radiation therapy as DNA damage enhances MICA/B expression by cancer cells.

“Since this is a broad target to general cancer stress signal, the vaccine may have broad applicability to many cancers and thus could be made to be an off-the-shelf approach,” Dr. Kesari added.

Although the study presents an exciting new approach to cancer vaccines, the results remain preclinical, noted Dr. Kesari.

“[Thus it] will need to be translated in the future in humans by conducting phase I clinical trials in the future to prove out its safety and efficacy,” he concluded.

Monkeypox (The Asian Age: 20220617)

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=16436856>

Can 'monkeypox' disease develop into a pandemic?



Chandrakant
Lahariya

Starting in the mid-1960s, intensive search and case identification was one of the eradication strategies for smallpox. Following those efforts, many countries had successfully brought down smallpox cases to zero. However, to ensure sustained "zero smallpox status", intensive field search and case investigations were carried out on a regular basis. In Zaire (a country in Africa, now known as Democratic Republic of Congo, or DRC), the last confirmed case of smallpox was reported in 1968. However, as part of eradication efforts, during an intensive search in 1970, in Zaire, a nine-year-old child with clinical symptoms and skin rashes similar to smallpox disease was identified. His sample was collected, which was tested negative for smallpox virus, but a new virus was isolated, which had never been reported to cause illness in humans. Before that, the virus was detected only once in 1958 in monkeys in a laboratory in Denmark. It was named as the "monkeypox" virus.

Since the 1970s, monkeypox has been reported from 11 countries in Central and Western Africa. The regular outbreaks are reported from these countries where it is considered endemic. Outside the eleven endemic countries in Africa, the virus was the first reported in the United States in 2003, where it entered through import of animals from Africa. During that outbreak, there were nearly 50 cases in humans. Since then, sporadic cases have been reported from the UK, Israel and Singapore as well.

However, in May 2022, things appear to have changed. On May 6, a laboratory-confirmed case of monkeypox disease was reported from Britain.

This person had travelled to Nigeria on April 20 and returned on May 3. Since then, until June 12, nearly 1,250 cases of monkeypox have been reported in at least 28 countries across Europe, North America and Australia. Most of these had never reported monkeypox disease.

Monkeypox is a zoonotic disease that spreads from animals to humans. It belongs to the family of smallpox viruses. The incubation period — the time from exposure to first appearance of symptoms — is five to 21 days. Key clinical features include fever, body aches, rashes and swollen lymphatic glands. In settings where the disease is already endemic or a confirmed case has been detected, the fever, rashes and swollen glands (lymphadenopathy) should raise suspicion of monkeypox. The disease is mild and self-limiting, but children, pregnant women and people with suppressed immunity are at a higher risk of severe outcomes. There are two clades or strains — West African and Central African (Congo Basin) Clade. The ongoing outbreak is attributable to the West African clade, which is comparatively less dangerous and with a low case fatality of zero to three per cent. In fact, no death has been reported from non-endemic countries in the current outbreak.

As with most other viral diseases, the treatment is based on symptoms. A new drug against monkeypox, Tecovirimat, was approved in early 2022 and is available in some countries. Two other antiviral drugs, Cidofovir and Brincidofovir, are in clinical trial stages.

The smallpox vaccine is known to have up to 85 per cent effectiveness against monkeypox. However, with the eradication of

Despite being endemic in 11 African countries for nearly 50 years, lack of funding for research on monkeypox drugs and vaccines is a reminder that diseases that affect low-income countries rarely get sufficient policy priority

smallpox in 1980, vaccination for the general population was stopped. Therefore, those born before eradication who received the smallpox vaccination may have some protection against monkeypox. As immunity declines with time, it is difficult to say how much protection they have. Currently, some smallpox vaccine stockpiles have been maintained, in the United States and some countries in Europe, to respond to any unexpected event such as an outbreak from laboratory spread or bioterrorism. However, smallpox vaccine stocks are not widely available and not available in India either. A specific monkeypox vaccine (MVA-BN; named after Modified vaccinia Ankara — Bavarian Nordic strain) was approved in the year 2019 but is not widely available. Limited stocks are available in some countries.

In today's world, the spread of a disease from one part of the world to another part is entirely possible as we have witnessed with the Covid-19 pandemic. In the ongoing monkeypox outbreak, it will not be surprising if one or more cases are reported from India as well. A number of new viruses have emerged and re-emerged in India in the past few years — including Nipah, Zika and West Nile virus. Therefore, being prepared to handle the emergence/outbreak of monkeypox is the only logical approach. The increased surveillance, tracking of the contacts and vaccination of family members and other possible contacts ("the ring vaccination") are the approaches, which are proven in stopping the monkeypox transmission.

Though the ongoing monkeypox outbreak in non-endemic countries is unprecedented, most experts agree that the disease is unlikely to turn into a pandemic. The reasons include that monkeypox is not a new virus; there are known methods of prevention; it is less contagious; the disease spreads mainly from animal to humans, human to human transmission being fairly low, and smallpox vaccines having a proven role in preventing transmission are available (though supply needs to be scaled up). Therefore, we need to be prepared but there is no reason to worry.

The ongoing monkeypox outbreak, though, raises a much bigger issue. Despite being endemic in 11 countries in Africa for nearly 50 years, the lack of funding for research on drugs and vaccines against monkeypox and insufficient efforts to ensure an assured supply of the available smallpox vaccines is a reminder that diseases that affect low-income countries rarely get sufficient research and policy priority. Today, the world is paying attention to the monkeypox, arguably because the high-income countries are getting affected. It's most likely that from now on, there will be more funding for scaling up research, deployment of vaccines and other measures.

The ongoing monkeypox outbreak is another reminder that the health of every citizen on this planet is interconnected. Regardless of which country is affected, the global community should fight and tackle it together. The world has failed to share the Covid-19 vaccines with poor countries and is paying a heavy price in the form of a prolonged pandemic. We can only hope that the monkeypox outbreak in non-endemic countries will be a timely reminder for global collaboration.

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Diet/ Nutrition

2-3 cups of coffee a day may reduce kidney injury risk by 23% (Medical News Today: 20220617)

<https://www.medicalnewstoday.com/articles/2-3-cups-of-coffee-a-day-may-reduce-kidney-injury-risk-by-23>

Researchers have investigated the effects of coffee intake on acute kidney injury risk.

They found that drinking any amount of coffee reduces the risk of acute kidney injury but that 2-3 cups per day is most beneficial.

They say that further research is needed to understand why this link may exist.

Coffee Trusted Source contains many beneficial compounds for health, including caffeine, diterpenes, and chlorogenic acid.

Studies Trusted Source show that habitual coffee consumption is linked to the prevention of chronic and degenerative conditions, including cancer, cardiovascular disorders, diabetes, and Parkinson's disease.

Caffeine, the most commonly studied compound in coffee, exerts positive effects on kidney function, and daily coffee consumption is linked to a lower risk of chronic kidney disease.

Although other compounds in coffee are less studied, compounds such as chlorogenic acid and trigonelline are known to reduce generalized inflammation and oxidative stress.

Knowing more about how coffee consumption affects the incidence of other kidney-related conditions could help policymakers take steps to reduce people's risk of developing progressive kidney disease.

Recently, researchers investigated the effects of coffee consumption on acute kidney injury (AKI), when the kidneys lose all or part of their function suddenly.

AKI represents a public health problem with around 0.25% of the general population experiencing AKI, which rises to 18% among individuals who are hospitalized annually.

From their analysis, the researchers found that higher coffee intake is linked to a lower risk of incident AKI.

The study was published in *Kidney International Reports*.

The most beneficial amount of coffee

For the study, the researchers used data from 14,207 adults ages 45 – 64 from the Atherosclerosis Risk in Communities (ARIC) study Trusted Source.

The researchers assessed the participants' coffee consumption during their first visit via a food frequency questionnaire. In total, they found:

27% never drank coffee

14% drank less than a cup of coffee per day

19% drank 1 cup per day

23% drank 2-3 cups per day

17% drank more than 3 cups per day

To define acute kidney injury, the researchers looked at rates of hospitalization, including an International Classification of Diseases code indicating AKI throughout a median period of 24 years follow-up. They noted 1,694 cases of incident AKI during the follow-up period.

After adjusting for demographic factors, they found that individuals who consumed any amount of coffee had an 11% lower risk of developing AKI compared to individuals who did not consume the beverage.

The researchers further noted a dose-dependent relationship between AKI and coffee intake, with those consuming 2-3 cups of coffee per day experiencing the most substantial risk reduction.

Coffee's protective effects

When asked what might explain the potential protective effects of coffee for acute kidney injury, Dr. Matthew Weir, professor of medicine and the head of the Division of Nephrology at the University of Maryland, who was not involved in the study, told Medical News Today that the study did not offer clues.

“[The researchers] provide theories, but there are numerous problems with retrospective data review, which may confound the observations and limit the validity. At least there was no evidence of harm,” said Dr. Weir.

In the study, the researchers noted their findings might be the result of bioactive compounds in coffee that improve perfusion and oxygen utilization in the kidneys.

Dr. Kalie L. Tommerdahl, assistant professor of pediatric endocrinology at the University of Colorado, and Dr. Chirag Rohit Parikh, director of the Division of Nephrology at Johns Hopkins University, who were both authors of the study, told MNT that they conducted a companion study to further understand the potential mechanisms.

“We studied ten youths aged 12 to 21 years old with type 1 diabetes and aimed to assess the effects of a confirmed 7-day course of a single daily Starbucks cold brew (325 ml, 175mg caffeine) on [various measures of renal function],” they said.

“The study included a small sample size. While it confirmed that we can effectively assess these intrarenal measures in adolescents with type 1 diabetes, we did not find any differences in [renal function] following a short course of daily coffee consumption,” they added.

The researchers concluded that they needed to further evaluate the physiological mechanisms underlying the potentially protective effects of coffee consumption in larger studies of a longer duration.

What about other caffeinated beverages?

Dr. Weir noted that the study had many limitations that the authors readily accounted for in their paper.

When asked about these limitations, Dr. Tommerdahl and Dr. Parikh said the main limitation was that they used “a food frequency questionnaire that relied on participant recollection rather than direct measurement to assess average daily coffee consumption.”

“Coffee additives such as milk, half-and-half, creamer, sugar, or sweeteners could also influence outcomes and warrant further investigation,” they added.

They pointed out that other beverages may produce similar effects.

“In addition, consumption of other caffeinated beverages such as tea or soda should also be considered a possible confounding factor. Further limitations include reliance on the inclusion of AKI on the problem list during inpatient hospitalization and the potential for confounding effects from differences in etiologies for participant hospitalization,” they said.