



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
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ग्लोबल वार्मिंग

ग्लोबल वार्मिंग के खतरों से धरती को बचाने के लिए तेज हो अभियान (Dainik Jagran: 20211014)

<https://www.jagran.com/news/national-increasing-sensitivity-to-global-warming-jagran-special-22112000.html>

भौतिकी का नोबेल पुरस्कार इस बार जलवायु विज्ञान पर काम करने वाले विज्ञानियों को दिया जाएगा। प्रतीकात्मक

मौसम और जलवायु के रिश्ते के संबंध में किए गए संबंधित शोध को दुनिया का सर्वोच्च पुरस्कार मिलने के बाद निस्संदेह विविध देशों की सरकारों संगठनों और विज्ञानियों का इस समस्या की तरफ और अधिक ध्यान आकर्षित होगा।

संजय श्रीवास्तव। इस वर्ष जिन विज्ञानियों को भौतिक विज्ञान का नोबेल पुरस्कार दिया जाएगा, वे भौतिकी की अलग अलग शाखाओं से जुड़े हुए हैं। परंतु जिस बिंदु पर जाकर वे मिलते हैं वह है हमारा पर्यावरण, जलवायु और उसकी गंभीरतम समस्या ग्लोबल वार्मिंग। इस वर्ष के भौतिकी के नोबेल पुरस्कार के लिए चुने गए स्युकुरो मनाबे, क्लास हेसलमैन और जियोर्जियो पैरिसी ने अलग अलग काम करके जो गणितीय पैरामीटर पर आधारित भौतिकी माडल तैयार किया, उनकी सहायता से जलवायु परिवर्तन के घटनाक्रमों का पूर्वानुमान और सटीक हो गया।

अब तक इन्हें अनियमित और अनियंत्रित समझा जाता रहा था, लेकिन अब इनके तौर-तरीके पहचाने जा सकेंगे। मौसम में हो सकने वाले बदलावों का न केवल गणितीय व भौतिकीय आकलन करना संभव होगा, बल्कि बदली हुई जलवायु का मनुष्य पर पड़ने वाले प्रभावों का भी अनुमान लगाया जा सकेगा।

इन विज्ञानियों के शोध से यह भी साबित हुआ कि जलवायु परिवर्तन के ये भौतिकीय माडल पूरी तरह विश्वसनीय क्यों हैं। इन विज्ञानियों ने विगत दो वर्षों में ही कोई शोध निष्कर्ष निकाला हो ऐसी बात नहीं, बहुत पहले ही इन्होंने जलवायु संबंधी कई माडल विकसित किए और उनके माडल से पता चला कि वातावरण में बढ़ रहे तापमान के लिए कौन से कारक कितने दोषी हैं और इसमें मानवीय कारक किस कदर है।

अब नोबेल की प्रतिष्ठा प्राप्त होने के बाद पर्यावरणवादियों के दावों को पर संदेह करने और ग्लोबल वार्मिंग के संबंध में उनकी पूर्वानुमानित चेतावनियों को खारिज कर उसे भयादोहन का हथियार मानने वाले अब उतने प्रखर और प्रबल नहीं रह पाएंगे। फिलहाल हमारे ग्रह की एक सबसे महत्वपूर्ण विशेषता जो हमें यहां रहने के काबिल बनाती है, वह है यहां की जलवायु और पर्यावरण। हमारी इसी विशेषता को दुर्दशा से बचाने की दिशा में हुए शोध और खोज को नोबेल सरीखा सर्वोच्च सम्मान मिलना सुखद है।

जलवायु की गुत्थी समझना आसान नहीं। जलवायु कई गतिमान कारकों और बहुत से जटिल प्रणालियों से मिलकर बनता है। इसके चलते मौसम की सटीक भविष्यवाणी तो फिर भी कुछ मुमकिन है, पर जलवायु के व्यवहार की किसी भी भविष्यवाणी को यह स्थिति अत्यंत कठिन बना देती है। ऐसे में जिनसे यह पता चले कि प्रकृति कैसे काम करती है, ऐसे मानकों को आंकड़ों और गणितीय सूत्रों में बदलकर तैयार किए गए भौतिकीय प्रारूपों की सहायता से ही अब तक जलवायु परिवर्तन जैसी बड़ी समस्या से लड़ने की राह खोजी गई है। ये बेहद सूक्ष्म गणनाओं से युक्त और अत्यंत सटीक हैं। भौतिकी के आधार पर तैयार क्लाइमेट माडल से ही तेजी से हो रहे जलवायु परिवर्तन पर नजर रखना संभव हुआ और यह जानना भी कि धरती का तापमान कितनी तेजी से बढ़ रहा है और इसकी वजह से समुद्र के जलस्तर वृद्धि के अलावा दूसरे तमाम प्राकृतिक कुप्रभाव आगामी दशकों में हमें कितना नुकसान पहुंचा सकते हैं। भावी पीढ़ियों के लिए यह साफ संदेश है कि हमें इन लक्ष्यों को पाना ही होगा और इसके लिए अब काम करना ही होगा।

90 वर्ष से अधिक उम्र के जियोर्जियो पैरिसी का बयान महज अवसर विशेष पर दिया गया सामान्य उद्गार नहीं है, बल्कि इसके पीछे गहरे निहितार्थ हैं, इसमें चेतावनी और चिंताएं छिपी हुई हैं। दशकों पहले इन विज्ञानियों ने धरती के गरमाने के कारकों के बारे में चेताया था कि इनको नियंत्रित न किया गया तो किस दर से कितने समय में किस स्तर की क्या क्या तबाही मच सकती है? मनाबे ने अपने एक सहयोगी के साथ मिलकर 1967 में यह साबित किया था कि कार्बन डाइआक्साइड के उत्सर्जन और धरती के गरमाने का सीधा संबंध है। लगभग साढ़े चार दशक पहले ग्लोबल वार्मिंग की प्रक्रिया

पहली बार विस्तार से प्रस्तुत हुई और जलवायु का भौतिकीय माडल बना जो आज के अति उन्नत माडलों का आधार है।

मनाबे की खोज के 10 साल बाद हेसलमैन ने भी मौसम और जलवायु को एक साथ जोड़ने वाला माडल बनाकर इस सवाल का जवाब दिया कि मौसम के अनियंत्रित होने के बावजूद जलवायु माडल विश्वसनीय कैसे हो सकते हैं। वर्ष 1979 में पैरिसी ने एक बड़ी कामयाबी पाई, जब उन्होंने मिश्रधातु स्पिन ग्लास पर प्रयोग किया। उन्होंने स्पिन ग्लास को धरती के जटिल जलवायु व्यवहार के सूक्ष्म जगत के रूप में देखा और उसकी तुलना उन्होंने परमाणु और ग्रहों के पैमाने पर की तो वहां भी अराजक और अनियंत्रित व्यवहार दिखा जो संयोग से नियंत्रित प्रतीत होता था। उन्होंने एक गहन भौतिकी और गणितीय माडल तैयार किया जिससे जटिल प्रणालियों को समझना आसान हुआ। कई साल लगाने के बाद इसे गणितीय रूप से समझाने का एक तरीका मिला। वर्ष 2015 में ब्रिटेन की 'कार्बन ब्रीफ' नामक एक आनलाइन प्रकाशन संस्था जो मौसम विज्ञान और उससे जुड़े पहलुओं पर रिपोर्ट प्रकाशित करती है उसने ग्लोबल वार्मिंग के लिए तीन प्रमुख खलनायकों में सबसे प्रमुख कार्बन डाइआक्साइड को माना था।

उसके बाद कार्बन डाइआक्साइड या ग्रीन हाउस गैसों के उत्सर्जन को रोकने और दुनिया को ग्लोबल वार्मिंग के जोखिम से बचाने की खूब चर्चा हुई और खर्चा भी किया गया, लेकिन नतीजा उस लक्ष्य से कोसों दूर है जिसे हम पाना चाहते हैं। इसकी वजह है हमारे प्रयासों में समग्रता और प्राथमिकता की कमी के साथ राजनीतिक हस्तक्षेप और कारपोरेट व बाजार के दखल के चलते इरादों और प्रयत्नों में ईमानदारी का अभाव। विकास के नाम पर पर्यावरण से खेलना, कार्बन उत्सर्जन, मौसम में बदलाव तथा ग्लोबल वार्मिंग को चुनौती देने वाले कृत्यों में जलवायु क्षेत्र में दिए जाने वाले इस पुरस्कार के बाद कोई बड़ी कमी आएगी, फिलहाल ऐसा मुश्किल लग रहा है। (ईआरसी)

स्वस्थ आंखें

एक्सपर्ट्स से जानें कैसे बनाए रख सकते हैं अपनी आंखों को हेल्दी! (Dainik Jagran: 20211014)

<https://www.jagran.com/lifestyle/health-world-sight-day-2021-know-from-experts-how-to-keep-your-eyes-healthy-22112094.html>

जिन लोगों को स्वस्थ आंखें मिली हैं वे उनकी सेहत पर ज़्यादा ध्यान नहीं देते। यही वजह है कि हर साल अक्टूबर के दूसरे गुरुवार को हर साल विश्व दृष्टि दिवस मनाया जाता है ताकि लोगों को आंखों की सेहत के प्रति जागरूक किया जा सके।

नई दिल्ली, रूही परवेज़। World Sight Day 2021: आंखें किसी नियामत से कम नहीं होतीं। इनकी वजह से आप इस खूबसूरत दुनिया को देख पाते हैं, लोगों को पहचान पाते हैं। दुनियाभर में लाखों ऐसे लोग हैं, जिनकी या तो पास की या फिर दूर की नज़र कमज़ोर है। हज़ारों ऐसे हैं जो या तो जन्म से या फिर किसी वजह से नेत्रहीन हैं। सिर्फ भारत में ही दुनिया के 20% से ज़्यादा आबादी नेत्रहीन हैं। जिन लोगों को स्वस्थ आंखें मिली हैं, वे उनकी सेहत पर ज़्यादा ध्यान नहीं देते। यही वजह है कि हर साल अक्टूबर के दूसरे गुरुवार को हर साल विश्व दृष्टि दिवस मनाया जाता है, ताकि लोगों को आंखों की सेहत के प्रति जागरूक किया जा सके। इस साल विश्व दृष्टि दिवस 14 अक्टूबर तो मनाया जा रहा है। इस मौके पर हम ने कुछ आई स्पेशलिस्ट से बातचीत की कि हमें अपनी आंखों की सेहत के लिए क्या करना चाहिए?

आंखों की अच्छी सेहत के लिए क्या करना चाहिए?

- शार्प साइट आई हॉस्पिटल्स की वरिष्ठ नेत्र चिकित्सक, डॉ. सौम्या शर्मा का कहना है, "वैसे तो आंखों में अगर कोई छोटी सी भी दिक्कत होती है तो तुरंत डॉक्टर से संपर्क करना ही चाहिए, लेकिन अगर आप समय-समय पर वैसे ही अपनी आंखों का चेकअप करवाते रहें, तो भविष्य में होने वाली किसी भी दिक्कत का पहले से पता लगा सकते हैं या फिर उससे बच सकते हैं। आंखों का नियमित रूप से चेकअप करवाने की कई वजह ज़रूरी नहीं है। हम देख रहे हैं कि कई केस आते हैं, जिसमें केस काफी बिगड़ा हुआ होता है और उसके पीछे वजह मरीज़ की लापरवाही ही होती है। इसलिए नियमित रूप से आंखों की जांच करवाना ज़रूरी होता है।

दरअसल, टाइम के साथ लोगों को फोन या लैपटॉप आदि में स्क्रीन टाइम बढ़ता जा रहा है, इस वजह से आंखों पर काफी दबाव पड़ता है। स्क्रीन से होने वाली दिक्कत से बचने के लिए सामान्य नियमों को फॉलो करना होता है, जिसमें स्क्रीन को ज्यादा देर न देखना और बीच-बीच में ब्रेक लेना शामिल है। इसके अलावा 20-20-20 रूल को फॉलो करना चाहिए। इसमें आप स्क्रीन पर 20 मिनट काम करने के बाद 20 फीट दूर तक देखें और फिर 20 सेकेंड का रेस्ट लें। साथ ही बीच में आंखों को झपकाना न भूलें। लाइट को कम रखें और लैपटॉप या मोबाइल फोन को आंख के एंगल से थोड़ा नीचे रखें। इसके अलावा अपने बैठने के तरीके का भी ध्यान रखें।

- इसके अलावा इस दौरान बच्चों पर खास ध्यान रखने की ज़रूरत है, क्योंकि ऑनलाइन क्लास या एंटरटेनमेंट के चलते बच्चे भी स्क्रीन पर टाइम ज्यादा बिता रहे हैं। इसलिए कोशिश करें कि वो फोन की बजाय फिज़िकल गेमिंग पर ध्यान दें और फोन का इस्तेमाल कम करें। अगर ज़रूरी है तो उन्हें बताएं कि बीच-बीच में आंखों का झपकाना ज़रूरी है, लगातार स्क्रीन पर न देखें। ऐसे में उनका खास ध्यान रखें और बीच-बीच में बच्चों को कुछ देर का रेस्ट भी दें। उन्हें भी अच्छे से बैठकर पढ़ने के एंगल पर ध्यान रखने के लिए कहें।

- शार्प साईट आई हॉस्पिटल्स के को-फाउंडर और मेडिकल डायरेक्टर, डॉ. समीर सूद का कहना है, 'अक्सर होता है कि लोगों को आंखों में जलन, आंख की वजह से सिर दर्द होना, आंखों से ज्यादा पानी गिरना या ड्राई आंखों की दिक्कत आती है, जिन्हें लोग किसी न किसी का कारण मानकर इग्नोर कर देते हैं, जैसे गर्मी की वजह से आंखों में जलन, स्ट्रेस की वजह से सिर दर्द। अगर आपको इनमें से कोई लक्षण दिखते हैं और आपको लगता है कि लंबे समय से आपको इन दिक्कतों का सामना करना पड़ रहा है, तो आपको बिना देरी डॉक्टर से संपर्क करना चाहिए। दरअसल, ऐसी बीमारियों का समय पर इलाज होना ज़रूरी है। आपको बता दूं कि आंखों में ड्राईनेस एक नहीं कई कारणों से होती है, इसलिए ऐसा होने पर डॉक्टर से संपर्क करके इसकी वजह जानें और उसका इलाज करवाएं।

Suicides

Suicides among Japanese children at record high during pandemic, says media (The Indian Express: 20211014)

<https://indianexpress.com/article/world/suicides-among-japanese-children-at-record-high-during-pandemic-says-media-7571104/>

As the COVID-19 pandemic prompted school closings and disrupted classrooms last year, 415 children from elementary to high school age were recorded as having taken their own lives, according to the education ministry's survey.

Child suicides in Japan are the highest they have been in more than four decades, local media have reported, citing the country's education ministry.

As the COVID-19 pandemic prompted school closings and disrupted classrooms last year, 415 children from elementary to high school age were recorded as having taken their own lives, according to the education ministry's survey.

The number is up by nearly 100 from last year, the highest since record-keeping began in 1974, the Asahi newspaper reported on Thursday.

Suicide has a long history in Japan as a way of avoiding perceived shame or dishonour, and its suicide rate has long topped the Group of Seven nations, but a national effort brought numbers down by roughly 40 percent over 15 years, including 10 straight years of decline from 2009.

Amid the pandemic, suicides increased in 2020 after a decade of declines, with the number of women committing suicide surging amid the emotional and financial stress caused by the coronavirus pandemic, although fewer men took their own lives.

The education ministry said a record high of more than 196,127 school children were absent for 30 days or more, media reported.

The results showed that changes in school and household environments due to the pandemic have had a huge impact on children's behaviour, NHK quoted an education ministry official as saying.

Yoga

Yoga expert shares effective breathing exercises that can help if you have Covid (The Indian Express: 20211014)

<https://indianexpress.com/article/lifestyle/fitness/covid-effective-breathing-exercises-pranayam-lung-capacity-third-wave-7569489/>

"These can be practiced several times a day in duration of 1-5 mins per round or any time frame that is comfortable," said yoga trainer Mansi Gandhi

Covid-19 breathing exercises, how to recover from Covid-19, third wave covid, pranayams benefits, how to improve lung capacity, how to improve breathing capacity post Covid, indianexpress.com, indianexpress, Lessen feelings of anxiety and stress with these breathing exercises. (Source: Pexels)

While things have gradually started opening up, coronavirus continues to impact many, making it essential for people to follow Covid-19 appropriate behaviour.

The respiratory infection can cause breathing trouble in patients, especially those with co-morbidities. As such, experts suggest incorporating breathing exercises in one's fitness routine to improve lung function. Even otherwise, breathing exercises or Pranayamas are known to improve focus, build lung strength, and induce a sense of peace and calm when practiced with the correct technique.

Here is yoga trainer Mansi Gandhi recommending a few breathing exercises that one can incorporate in their daily routine.

"Breathing exercises that can help if you have covid, but can be practiced by anyone or at anytime," she captioned the post.

Exercise 1

- *Lie on your back with the knees bent.
- *Place one hand on the navel and the other hand on top of it.
- *Breathe in pushing the navel into the palms counting to six.
- *Breath out pulling the navel away from the palms counting to six.
- *Repeat.

Exercise 2

- *Sit cross-legged or on a chair.

- *Place one hand on the navel and the other hand on the first.
- *Breathe into the palms pushing the navel into it, counting to six.
- *Breathe out pulling the navel away from the palm.
- *Repeat.

Exercise 3

- *Sit cross-legged or on a chair.
- *Extend the hands in front of the chest joining the palms together.
- *Inhale. Open the hands taking them out at shoulder level to a count of four.
- *Exhale. Bring the hands back together again to a count of four.
- *Repeat.

Benefits

These can help

- *Restore diaphragm function.
- *Increase lung capacity.
- *Lessen feelings of anxiety and stress.
- *Improve sleep.
- *Plays an important role in Covid-19 recovery, said Mansi.

Precautions

Do not start if

- *You have a fever.
- *You have shortness of breath.
- *You have chest pain or palpitations.
- *You have swelling in your legs.

Stop immediately if you experience

- *Dizziness.
- *More than usual shortness of breath.
- *Chest pain.

*Excessive fatigue.

*Irregular heartbeat.

“The above can be practiced several times a day in duration of 1-5 mins per round or any time frame that is comfortable,” she mentioned.

Malaria

The journey of Mosquirix and future of Malaria (The Indian Express: 20211014)

<https://indianexpress.com/article/research/the-journey-of-mosquirix-and-future-of-malaria-7569157/>

Malaria has plagued mankind for tens of thousands of years and the pesky mosquito, which serves as the host or vector for the disease, has killed more human beings than any other creature in existence, facilitating 400,000 deaths annually.

Unlike in Europe and North America, countries in Asia and Africa have a long way to go before eradicating malaria.

The World Health Organisation’s (WHO) recent decision to endorse a vaccine for malaria, clinically known as the RTS,S vaccine and colloquially called Mosquirix, was a massive milestone in the campaign to eradicate the disease. Malaria has plagued mankind for tens of thousands of years and the pesky mosquito, which serves as the host or vector for the disease, has killed more human beings than any other creature in existence, facilitating 400,000 deaths annually.

Early evidence of malaria exists dating back to 2700 BC with the disease said to have contributed to the decline of the Roman Empire, the weakening of indigenous populations during the colonisation of the Americas, huge losses for British forces during the Revolutionary War, and the death of thousands of American forces in the Indo-Pacific during World War Two. Recognising the deadly toll of malaria, most Western countries successfully eliminated the disease by the 1950s. This was largely done through supply-side interventions that reduced the prevalence of mosquitos in those regions.

However, malaria still devastates large parts of Africa and Asia, with Sub-Saharan countries in particular, accounting for the vast majority of cases and deaths. Mosquirix could provide

those regions with a potential, albeit limited, lifeline though challenges prevail in terms of administration, production, and complimentary antimalarial interventions.

Health officials prepare to vaccinate residents of the Malawi village of Tomali, where young children become test subjects for the world's first vaccine against malaria. (AP)

Why is Malaria more prevalent in some regions over others?

Dr Prakash Srinivasan, an Assistant Professor at Johns Hopkins School of Public Health and expert on malaria vaccines, tells indianexpress.com that “Western states, with developed economies, have been able to eradicate malaria carrying mosquitos due to improved sanitation and other control measures like insecticides and drugs.” However, just because malaria isn't currently prevalent in those regions, doesn't mean that the situation will remain that way. Many strains of malaria have developed immunity to insecticides and, according to Srinivasan, “with global climate change, countries are getting warmer, and it is possible that malaria can re-emerge without proper control measures.”

Unlike in Europe and North America, countries in Asia and Africa have a long way to go before eradicating malaria. According to Srinivasan, there are a number of reasons why malaria has not been eradicated in Africa and Asia, ranging from logistical challenges to the evolution of the disease and socio-economic factors that hinder intervention.

For now, however, the problem is primarily centred around Africa, which accounts for 94 per cent of global malaria cases. This is partially because mosquitos thrive in tropical climates, where the heat and humidity increase the lifespan of the mosquito which gives the disease time to metastasise.

Malaria is primarily transmitted by Anopheles mosquitoes, which develop faster in the temperate waters found in the tropics. Given that the disease likely originated in Africa, Srinivasan also claims that mosquitos evolved in tandem with humans and thus are more resilient in those regions. Srinivas says humans have actually developed a greater resistance to the diseases in Africa. “African adults are probably bitten by several malaria-carrying mosquitos over the course of their lifespan,” he explains. “Most of them develop some sort of antibodies that protect them which is why children under the age of five, who don't have those antibodies, are particularly vulnerable.”

Countries in Africa also have lower standards of living and poor sanitation conditions. This prevents them from implementing control measures like the use of mosquito nets, pesticides, and rapid treatment. Once the symptoms of malaria appear, it can take under 24 hours for the disease to kill its host and without access to healthcare, people in poor countries are particularly vulnerable. Lack of proper sanitation measures also mean that those countries have inadequate water management techniques, which in turn, provides breeding grounds for the mosquitos.

According to Srinivasan, because malaria is seen as a “tropical disease,” there is little impetus for industries and the governments of developed economies to research a vaccine. “Unlike Covid,” he says, “the malaria vaccine has been in trials for over 25 years.”

However, in terms of net investment, relatively little has been spent on eradication because it poses less of a risk to developed economies. Countries that have achieved at least three consecutive years of zero indigenous cases are declared malaria-free by the WHO. Thus far, only 11 countries have reached that benchmark. However, globally, the elimination net is widening. In 2019, 27 countries reported fewer than 100 indigenous cases of malaria compared to six countries in 2000.

“The World Health Organization’s recommendation of RTS,S/AS01 for use as a complementary malaria prevention tool is a historic milestone in vaccine development, scientific innovation for malaria and long-term public-private partnerships,” says a representative of the Bill and Melinda Gates Foundation.

However, Srinivasan was quick to clarify that while the WHO has endorsed the vaccine, it has not yet approved it. Produced currently by GlaxoSmithKline, Mosquirix is still a long way away from being found at doctors’ offices or in pharmacies. “What the WHO has done is give a strong recommendation for its wide-spread use,” says Srinivasan, adding that the final approval will still come from regulatory agencies of respective countries.

Although researchers knew that the vaccine was effective in clinical trials for many years, questions remained surrounding its suitability in real world settings. However, since 2019, Mosquirix, has been administered to approximately one million people in Malawi, Kenya, and Ghana, three countries with high rates of malaria. The efficacy of the vaccine in those settings ranges around 30 per cent which is modest compared to vaccines designed to prevent diseases such as polio and Covid, but nonetheless significant.

Mosquirix, has been administered to approximately one million people in Malawi, Kenya, and Ghana. (AP)

When asked why this was such a seminal moment given the context of the Covid vaccine being developed so quickly and efficiently, Srinivasan explains: “First, because parasites are far more complex pathogens, malaria in particular codes for around 5000 proteins in its genome so the challenge is what do you target. For Covid in comparison there are only a handful of proteins and only one major protein on the surface. Also, the parasites have multiple forms. There are forms that are found in the red blood cells which cause the disease but there are also forms that are found in the saliva, found during the reproductive phase and so on.”

He explains that the RTS,S vaccine targets the stage of the parasite called sporozoites that are transmitted by the mosquitos. “It does so by generating antibodies to sufficient levels to prevent the sporozoite from entering the liver, the phase known as the silent phase because it doesn’t cause any clinical symptoms. Once it exits the liver, it enters the red-blood cells, causing the disease.”

The complexity of the disease makes Mosquirix ground-breaking. However, combined with the high mortality rate of malaria, the results are even more impressive.

“We should be aiming higher than 30 per cent,” states Srinivasan, but the context is relevant given that there are over 400,000 deaths annually from malaria. Even though the 30 per cent won’t translate directly into a 30 per cent reduction of deaths, it will still save tens of thousands of lives per year according to WHO estimates.

Additionally, according to Srinivasan, “getting the seal of approval goes a long way in allaying fears, especially because the current data which the WHO used as the basis of its recommendation was based on real-life evaluation of this vaccine under real-life conditions. This means that the tests were not administered in doctors’ offices but rather in conditions under which the vaccine would regularly be given, like with measles or polio.”

This in turn demonstrated that wide-spread availability could be accepted by the local populations and that bodes well for the vaccine because it shows that people understand its importance.

Challenges

Distribution will remain complicated however and given that the vaccine requires four doses spread across one year, making sure that people complete the dose will be a challenge. Additionally, there are questions over how the vaccine will be manufactured and according to Srinivasan, “licensing of this technology will be crucial, alongside distribution.”

Moreover, prevention is still more effective than treatment. Srinivasan and other experts argue that Mosquirix alone will have a limited impact unless paired with other anti-malarial strategies. Drugs and vaccines become less effective the more they are used as they give malaria parasites more opportunities to develop resistance.

Since 2000, most progress in malaria control has resulted from expanded access to vector control interventions, particularly, sleeping inside an insecticide-treated net (ITN). ITNs can reduce contact between people and mosquitos and since 2019, an estimated 46 per cent of all people at risk of malaria in Africa were protected by an ITN, compared to 2 per cent in 2000. However, ITN coverage has been limited since 2016.

According to the representative from the Gates Foundation, “while the addition of RTS,S gives countries with high malaria burden another option to consider, accelerating progress against and saving more lives now from malaria requires significantly scaling up a range of current and cost-effective tools, including improved long-lasting insecticide nets (LLINs), seasonal malaria chemoprevention (SMC) and intermittent preventive treatment in pregnancy and infancy (IPTp and IPTi).”

Funding for malaria eradication has also decreased over the years and in 2019, total funding reached \$ 3 billion against a target of \$ 5.6 billion. (AP)

Another prevention tactic is the use of indoor residual spraying (IRS), which involves spraying the inside of housing structures with an insecticide, typically once or twice annually. Globally, IRS protection declined from 5 per cent in 2010 to 2 per cent in 2019, in part, because the disease was generating resistance to the insecticides. According to the WHO’s

latest World Malaria Report, 73 countries reported mosquito resistance to at least one of the four commonly used insecticides in the period between 2014-2019. In 28 countries, mosquito resistance was reported to all the main insecticide classes.

Additionally, according to the report, “gaps in access to life-saving tools are undermining global efforts to curb the disease, and the COVID-19 pandemic is expected to set back the fight even further.”

Funding for malaria eradication has also decreased over the years and in 2019, total funding reached \$ 3 billion against a target of \$ 5.6 billion. Calling it a plateau in progress, the report states that, “in 2019, the global tally of malaria cases was 229 million, an annual estimate that has remained virtually unchanged over the last 4 years.” Progress has slowed in recent years and gaps in funding threaten to roll-back gains made since 2000, a timeframe in which malaria deaths reduced by 44 per cent.

Disruptions in the supply of anti-malarial treatment in Sub-Saharan Africa caused by Covid, could similarly have devastating effects. For example, the report finds that a “10 per cent disruption in access to effective antimalarial treatment in sub-Saharan Africa could lead to 19,000 additional deaths in the region. Disruptions of 25 per cent and 50 per cent in the region could result in an additional 46 000 and 100 000 deaths, respectively.” According to WHO global projections, the 2020 target for reductions in malaria case incidence will be missed by 37 per cent and the mortality reduction target will be missed by 22 per cent.

The Mosquirix vaccine will undoubtedly catalyse the campaign to eradicate malaria, especially amongst vulnerable populations living in Africa. However, in order for it to succeed, three main criteria must be met. First, the vaccine must be licensed to production centres across the globe, similar to how Covishield is produced by the Serum Institute of India, using a formula developed by AstraZeneca. Second, there must be parallel efforts to ramp up measures and healthcare infrastructure that will prioritise prevention and rapid treatment. Lastly, the vaccine should not deter future funding for malaria research and the global community must avoid becoming complacent in the face of this recent progress.

According to the representative from the Gates Foundation, “achieving malaria eradication will require more than the tools we have today. The first-ever malaria vaccine brings us a major step forward in our goal of developing a highly effective, all ages elimination vaccine. Additional investment in transformative tools is critical to saving millions more lives, reducing the burden on health systems and ending the disease for good.”

Nutrition/ Diet

Study says warm milk makes you sleepy, here's why (Hindustan Times: 20211014)

<https://www.hindustantimes.com/lifestyle/health/study-says-warm-milk-makes-you-sleepy-here-s-why-101634189649492.html>

Milk's sleep-enhancing properties are commonly ascribed to tryptophan, but scientists have also discovered a mixture of milk peptides, called casein tryptic hydrolysate (CTH), that relieves stress and enhances sleep.

According to time-honoured advice, drinking a glass of warm milk at bedtime will encourage a good night's rest.

According to time-honoured advice, drinking a glass of warm milk at bedtime will encourage a good night's rest. Here's why.

Milk's sleep-enhancing properties are commonly ascribed to tryptophan, but scientists have also discovered a mixture of milk peptides, called casein tryptic hydrolysate (CTH), that relieves stress and enhances sleep.

Now, researchers reporting in the American Chemical Society's Journal of Agricultural and Food Chemistry have identified specific peptides in CTH that might someday be used in new, natural sleep remedies.

According to the US Centers for Disease Control and Prevention, one-third of U.S. adults don't get enough sleep. Sedatives, such as benzodiazepines and zolpidem, are commonly prescribed for insomnia, but they can cause side effects, and people can become addicted to them. Many sedatives work by activating the GABA receptor, a protein in the brain that suppresses nerve signaling.

Scientists have also discovered several natural peptides, or small pieces of proteins, that bind the GABA receptor and have anti-anxiety and sleep-enhancing effects. For example, treating a protein in cow's milk, called casein, with the digestive enzyme trypsin produces the mixture of sleep-enhancing peptides known as CTH.

Within this mixture, a specific peptide known as α -casozepine (α -CZP) has been identified that could be responsible for some of these effects. Lin Zheng, Mouming Zhao and colleagues wondered if they could find other, perhaps more powerful, sleep-enhancing peptides in CTH.

The researchers first compared the effects of CTH and α -CZP in mouse sleep tests, finding that CTH showed better sleep-enhancing properties than α -CZP alone. This result suggested that other sleep-promoting peptides besides α -CZP exist in CTH.

The team then used mass spectrometry to identify bioactive peptides released from CTH during simulated gastric digestion, and they virtually screened these peptides for binding to the GABA receptor and for the ability to cross the blood-brain barrier.

When the strongest candidates were tested in mice, the best one (called YPVEPF) increased the number of mice that fell asleep quickly by about 25 per cent and the sleep duration by more than 400 per cent compared to a control group. In addition to this promising peptide, others in CTH should be explored that might enhance sleep through other pathways, the researchers say.

The authors acknowledge funding from the National Natural Science Foundation of China, the Guangdong Provincial Key R and D Program, the Shandong Provincial Key R and D Program, and the Specific Fund Program for Basic and Applied Basic Research of Guangdong Province.

Mental Health

What's the link between mental health and allergies? (Medical News Today: 20211014)

<https://www.medicalnewstoday.com/articles/whats-the-link-between-mental-health-and-allergies>

New research investigates the link between allergies and mental health conditions.

Research indicates that people with allergies exhibit a higher incidence of mental health conditions than other people.

A new study has analyzed UK Biobank data to investigate the possibility of a causal relationship between allergies and mental health conditions.

The findings confirm a correlation but find no evidence that one type of health issue causes the other.

Earlier research has shown that people with allergies are more likely to have at least one mental health condition. There is an elevated incidence of depression, schizophrenia, and anxiety among people with atopic dermatitis (AD), for example. Asthma and allergic rhinitis, or “hay fever,” have been linked with schizophrenia, depression, and bipolar disorder.

A new study of data from the UK Biobank confirms the correlation between allergies and mental health. However, correlation does not imply causation, and the study also finds it unlikely that allergies cause mental health conditions or vice versa.

The researchers used Mendelian randomization Trusted Source to investigate possible gene-level causal relationships between mental health disorders and allergies in general — as well as asthma, AD, and hay fever, specifically.

These mental health conditions included depression, major depressive disorder, anxiety, bipolar disorder, schizophrenia, and neuroticism. The researchers concluded, “We did not find evidence of causal effects between allergic disease genetic risk and mental health.”

Senior study author Dr. Hannah Sallis, a senior research associate in genetic epidemiology at Bristol Medical School, explains that the study ultimately utilized a variety of methodologies and data to reach its conclusions. “This helps to strengthen our confidence in the findings. Establishing whether allergic disease causes mental health problems, or vice versa, is important to ensure that resources and treatment strategies are targeted appropriately.”

The study has been published in the journal *Clinical and Experimental Allergy* Trusted Source.

The team analyzed data in the UK Biobank from individuals aged 37–73 years. However, all were of European ethnicity, so the study’s results may not apply to everyone.

The authors acknowledge another limitation, that “Phenotypic analyses were restricted to older adults, so findings may not generalize to younger populations.”

Study does not rule out causal connection

While this study only found weak, statistically insignificant indications of causal relationships, this does not rule them out entirely. According to lead study author Dr. Ashley Budu-Aggrey, also a senior research associate at Bristol Medical School:

“Our research does not rule out a potential causal effect upon the progression of disease, which is yet to be investigated and could help uncover novel treatment strategies for allergic disease or mental health traits.”

The researchers do note a few possible causal mechanisms that might have escaped their analysis.

Visible skin lesions or itching could lead to social consequences that might exacerbate mental health conditions. And sleep deprivation due to allergy discomfort could similarly affect a person’s mental health.

The study also cites the “inflammatory hypothesis,” which proposes that mental health conditions might arise from the immune system’s inflammatory response to allergies.

Tonya Twinders, the CEO of the Allergy & Asthma Network, who was not involved in the present research, mentioned an earlier study in an interview with Medical News Today.

This suggested that a possible shared mechanism might be “psychological distress, which is central to the etiology of psychiatric disorders but can also give rise to allergies.”

The observational associations

The researchers found that allergies correlated in different ways with mental health conditions, as follows:

Depression: The study confirmed a strong correlation between self-reported depression, major depressive disorder, and allergies in general. Asthma, AD, and hay fever were also strongly associated with depression.

Anxiety: Allergies in general were associated with anxiety, with a stronger correlation for AD than for asthma or hay fever.

Bipolar disorder: Asthma was linked with bipolar disorder, as were allergies in general.

Schizophrenia: The only allergy associated with schizophrenia was hay fever. The effect, however, was protective, meaning that people with hay fever were less likely to have schizophrenia.

Neuroticism: Allergies in general, asthma, and AD were linked with neuroticism. Hay fever was also associated with neuroticism, to a lesser extent.

The study concludes that “Few of the observed associations between allergic disease and mental health were replicated [in the causal investigation].

“The causal effect we did identify appears to be much lower in magnitude than that suggested observationally,” note the authors.

Twinders told MNT: “Intervening to prevent [the] onset of allergic disease is unlikely to directly improve mental health (and vice versa). Future work should investigate whether interventions that aim to improve allergic disease show stronger evidence of a causal effect on mental health (and vice versa).”

Dr. Budu-Aggrey has observed: “Common mental health disorders, such as anxiety and depression, are some of the largest contributors to the global burden of disease, and the prevalence of these and allergic disease has been increasing for some time.”

“Disentangling the nature of the relationship between allergic disease and mental health helps answer an important health question and suggests that the onset of allergic disease does not cause the onset of mental health traits, or vice versa.”

Hypertension

Switching to reduced-sodium salt may reduce stroke risk (Medical News Today: 20211014)

<https://www.medicalnewstoday.com/articles/switching-to-reduced-sodium-salt-may-reduce-stroke-risk#Impressive-results>

A new study asks whether reduced-sodium salt might lower stroke risk. Brian Hagiwara/Getty Images

High sodium and low potassium levels in the diet are associated with high blood pressure and an increased risk of heart disease and premature death.

A large, randomized trial in rural China has found that people who used reduced-sodium salt were less likely to have a stroke or die.

Importantly, reduced-sodium salt did not appear to increase the risk of hyperkalemia, which is dangerously high levels of potassium in the blood.

Widespread use of this type of salt could be a practical, inexpensive way to improve the health of low-income, disadvantaged populations.

The Centers for Disease Control and Prevention (CDC) report that 47% Trusted Source of adults in the United States, around 116 million people, have high blood pressure, also known as hypertension.

This health issue increases the risk of heart disease, stroke, and kidney disease. The CDC also notes that in 2019, hypertension was either the main cause or a contributing factor in the deaths of more than half a million people in the U.S.

Globally, more than 1.28 billion Trusted Source adults have hypertension, and two-thirds of these adults live in low- and middle-income countries, the World Health Organization (WHO) estimates.

Among the preventable causes of high blood pressure are smoking, alcohol consumption, physical inactivity, and being overweight.

High levels of sodium and low levels of potassium in the diet are also associated with hypertension and an increased risk of cardiovascular disease and premature death.

There is good evidence that limiting sodium Trusted Source in the diet and taking potassium supplements Trusted Source can lower blood pressure.

People can achieve both of these ends by replacing the ordinary salt that they add to food with reduced-sodium salt. Regular salt is sodium chloride, while the reduced-sodium variety is a mixture of sodium chloride and potassium chloride.

This kind of table salt is widely available and inexpensive, and it tastes very similar to regular salt.

However, there has been a lack of hard evidence that people who use reduced-sodium salt to preserve and season their food are less likely to have a stroke and die prematurely.

In addition, some experts have been concerned that using reduced-sodium salt could raise the amount of potassium in the blood to dangerous levels, a health issue known as hyperkalemia.

Now, a large trial in rural China that investigated the long-term health effects of reduced-sodium salt suggests that this type of salt not only lowers the risk of stroke and death — it is also safe to use.

The study focused on people who had experienced a stroke and older people with a history of hypertension.

The paper describing the results of the trial, which is called the Salt Substitute and Stroke Study, or SSaSS, now appears in *The New England Journal of Medicine*.

How the trial worked

The scientists recruited 20,995 people in 600 villages in rural China. The participants' mean age at the start of the study was 65.4 years, and around half were female.

Overall, 72.6% of the participants had experienced a stroke, and 88.4% had a history of hypertension.

The researchers randomly assigned half to continue using ordinary salt — the control group — and the other half to use a reduced-sodium salt, which contained 75% sodium chloride and 25% potassium chloride by weight.

Every 12 months, the scientists visited some of the villages to check that the participants were using the correct type of salt. To help confirm this, they also measured the amount of sodium and potassium excreted in the participants' urine and took blood pressure readings.

After a mean follow-up period of 4.74 years, the rate of strokes in the villages where the participants used reduced-sodium salt was 13% lower than in the villages using regular salt.

Specifically, the rate of strokes was 29.14 events per 1,000 person-years for the reduced-sodium salt group and 33.65 events for the ordinary salt group.

The mortality rate was 39.28 deaths per 1,000 person-years for the reduced-sodium salt group and 44.61 events for the regular salt group, which equates to a risk reduction of 12%.

Moreover, there was no significant difference in the rates of serious adverse events attributed to hyperkalemia in the reduced-sodium group, compared with the control group.

Population-wide use?

The authors note that the scale of protection was similar to that assumed in a recent modeling study^{Trusted Source}, which estimated that population-wide use of a salt substitute in China could prevent 365,000 strokes and 461,000 premature deaths.

They add that salt substitution could be a practical, low-cost intervention in low-income and disadvantaged populations in which people add large quantities of salt during food preparation and cooking.

The research was conducted in rural China, where many people prepare their own food rather than buying premade, processed food.

Medical News Today asked lead study author Prof. Bruce Neal, of The George Institute for Global Health, in Newtown, Australia, whether the results are likely to apply to other populations.

In the U.S., for example, the CDC reports that Americans get about 70%^{Trusted Source} of their dietary sodium intake from processed and restaurant foods.

“[The] benefits of lowering sodium, increasing potassium, and reducing [blood pressure] are likely to be highly generalizable, wherever [they are] achieved in the world,” said Prof. Neal.

But the benefits of using reduced-sodium salt would probably be greatest in places where people have the most control over the amount and type of salt in their food, he pointed out.

“The trial result provides a strong, indirect case for reducing sodium and maximizing potassium in processed foods,” he added.

As a safety precaution, the trial excluded anyone who was using a type of diuretic that reduces potassium excretion, taking a potassium supplement, or who had serious kidney disease.

Prof. Neal denied that this undermined the study’s finding that reduced-sodium salt is safe.

“We delivered the intervention safely and effectively by asking people to self-identify and exclude themselves if they were at risk of hyperkalemia,” he said.

“This was a simple and highly pragmatic approach that could be easily replicated anywhere to exclude people at risk,” he added.

Impressive results

In an accompanying editorial, Dr. Julie R. Ingelfinger, a pediatrician and senior consultant in pediatric nephrology, at Massachusetts General Hospital, in Boston, welcomed the findings.

Prof. Ingelfinger writes:

“The results of the SSaSS appear impressive. If the strategy is feasible over time, the salt-substitute approach might have a major public health consequence in China, and possibly elsewhere.”

However, she identifies some limitations of the study, in particular with regard to the potential risk of hyperkalemia.

“For example, serial monitoring of potassium levels was not performed in the trial, and it is possible that hyperkalemic episodes were not detected,” she writes.

“Furthermore, persons with a history of medical conditions that may be associated with hyperkalemia (e.g., chronic kidney disease) were not studied,” she added.

Prof. Ingelfinger also notes that the researchers did not investigate the effect of salt substitutes with higher or lower levels of potassium chloride.