



## DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Thursday 20191128

### किशोरों में डिप्रेशन

किशोरों में डिप्रेशन बढ़ रहा Social Media, कंप्यूटर और टेलीविजन पर भी जताई गई चिंता (Dainik Jagran: 20191128)

<https://www.jagran.com/world/united-kingdom-social-media-increasing-depression-among-teenagers-also-raised-concern-on-computer-and-television-19796416.html>

सोशल मीडिया के साथ ही कंप्यूटर और टेलीविजन पर ज्यादा समय बिताना भी किशोरों में अवसाद और चिंता का कारण। 12 से 16 वर्ष के चार हजार किशोरों पर चार सालों तक किया अध्ययन।

लंदन, प्रेट्र। किसी भी चीज की अधिकता जीवन में नुकसान ही पहुंचाती है। आधुनिक दुनिया में सोशल मीडिया, कंप्यूटर और टेलीविजन ने लोगों की दुनिया आसान कर दी है। वहीं, दूसरी ओर इनके अधिक इस्तेमाल से बीमारियां भी पनप रही हैं। एक अध्ययन में शोधकर्ताओं ने दावा किया है कि चार साल की अवधि के दौरान सोशल मीडिया, टेलीविजन और कंप्यूटर का बहुत ज्यादा इस्तेमाल करने से अवसाद और चिंता के लक्षणों के अधिक गंभीर होने का खतरा हो सकता है।

कनाडाई जर्नल ऑफ साइकेट्री में प्रकाशित शोध से पता चलता है कि सोशल मीडिया, कंप्यूटर और टेलीविजन देखने पर औसत आवृत्ति से ज्यादा आवृत्ति के संपर्क में रहने के कारण चिंता और अवसाद के लक्षण नजर आने लगते हैं। कनाडा की मॉन्ट्रियल यूनिवर्सिटी के शोधकर्ताओं के अनुसार जब किशोर सोशल मीडिया का उपयोग कम कर देते हैं तो अवसाद के लक्षणों में भी कमी आ जाती है।

हालिया अध्ययन में शोधकर्ताओं ने एक अहम बात यह पाई कि सोशल मीडिया का उपयोग और टीवी देखना केवल अवसाद को ही बढ़ाता है। जहां तक कंप्यूटर के इस्तेमाल का सवाल है तो शोधकर्ताओं ने बताया कि कंप्यूटर का संबंध अवसाद से नहीं बल्कि चिंता से है। यह अध्ययन बताता है कि किस तरह से युवाओं और उनके परिवारों को डिजिटल स्क्रीन पर समय बिताना चाहिए ताकि अवसाद और चिंता दोनों से बचा जा सके।

स्क्रीन पर ज्यादा समय बिताना भविष्य में अवसाद और चिंता से पीड़ित होने का सूचक है। मॉन्टियल यूनिवर्सिटी के प्रोफेसर पेट्रीसिया कॉनरेड ने बताया कि इस दिशा में और अधिक शोध करने की जरूरत है। ताकि और गहराई से सोशल मीडिया के प्रभावों का पता लगाया जा सके।

इस तरह किया गया अध्ययन : अध्ययन में कनाडा के 12 से 16 वर्ष की उम्र के चार हजार किशोर शामिल किए गए। प्रत्येक वर्ष इन किशोरों से यह बताने के को कहा गया कि उन्होंने कितना समय डिजिटल स्क्रीन में बिताया। इसके साथ ही सोशल मीडिया, कंप्यूटर, टेलीविजन और वीडियो गेम में अलग-अलग बिताए गए समय के बारे में भी जानकारी ली गई।

## मेडिकल टेस्ट किट

**कमाल की खोज: मरीजों को बड़ी राहत, जानें कैसे होंगे 500 रुपये वाले टेस्ट महज तीन रुपये में (Dainik Jagran: 20191128)**

<https://www.jagran.com/punjab/chandigarh-big-relief-to-patients-and-know-how-to-diagnosis-of-500-rupees-could-done-in-three-rupees-jagran-special-19795574.html>

चंडीगढ़ स्थित सीएसआइओ ने ऐसी अद्भूत मेडिकल टेस्ट किट बनाई है जिससे गंभीर बीमारियां की जांच बेहद आसानी व सस्ते में होगी। इससे 500 रुपये वाली जांच महज तीन रुपये में होगी।

चंडीगढ़, [वीणा तिवारी]। गंभीर रोगों से पीड़ित मरीजों के लिए बड़ी राहत की बात है। मधुमेह, हृदयरोग, रक्तचाप, स्तन कैंसर आदि रोगों का निदान (डायग्नोसिस) अब स्वदेशी संसंयुक्त किट के जरिये सस्ता और आसान हो जाएगा। चंडीगढ़ स्थित केंद्रीय वैज्ञानिक उपकरण संगठन (सेंट्रल

साइंटिफिक इंस्ट्रूमेंट्स ऑर्गेनाइजेशन, सीएसआइओ) की यह खोज आयातित किट पर निर्भरता खत्म कर देगी। विदेशी किट से निदान पर मरीजों को फिलहाल 100 गुना से भी अधिक खर्च करना पड़ रहा है।

मधुमेह, हृदयरोग, रक्तचाप, कैंसर जैसे रोगों का निदान स्वदेशी डायग्नोसिस किट से होगा सस्ता और आसान

सीएसआइओ का कहना है कि अब डायग्नोसिस के लिए विदेशी कंपनियों की महंगी जांच किट आयात करने की नौबत नहीं आएगी। भारत में ही ऐसी किट विकसित कर ली गई है, जो विदेशी किट की तुलना में 100 गुना कम दाम पर उपलब्ध होगी। ऐसा संभव हो पाया है वैज्ञानिकों द्वारा तैयार किए गए विशेष सेंसर से।

इस सेंसर की मदद से अलग-अलग बीमारियों की जांच के लिए बनाई जाने वाली जांच किट का निर्माण स्वदेश में संभव हो सकेगा। अब तक भारत में कोई भी कंपनी ऐसा सेंसर नहीं बना रही थी। जिसकारण विदेशी कंपनियों से मुंहमांगी कीमत पर किट आयात करनी पड़ रही थीं।

स्वदेशी सेंसर किट के बारे में जानकारी देते डॉ. प्रवीण कौशिक और डॉ. आकाश।

केंद्रीय वैज्ञानिक उपकरण संगठन के वैज्ञानिकों ने तैयार किया कारगर सेंसर

इस सेंसर को बनाने वाले सीएसआइओ के वैज्ञानिकों का कहना है कि उनके इस शोध के बूते देश में डायग्नोसिस के क्षेत्र में जल्द ही बड़ा परिवर्तन देखने को मिलेगा। सेंसर में कार्बन इंक का प्रयोग किया गया है जबकि विदेशी सेंसर में कॉपर और अन्य धातुओं का प्रयोग किया जाता है। जिससे उसकी कीमत 300 से 500 रुपये प्रति सेंसर होती है। सीएसआइओ में बनाए गए विशेष सेंसर की लागत तीन से पांच रुपये आ रही है।

डायग्नोसिस में इस्तेमाल हो रही आयातित महंगे किटों पर निर्भरता होगी खत्म

सीएसआइओ की नैनो टेक्नोलॉजी यूनिट में इस सेंसर को बनाने वाले सीनियर वैज्ञानिक डॉ. प्रवीण कौशिक और डॉ. आकाश ने बताया कि इसे बनाने में स्क्रीन प्रिंटिंग तकनीक से बनाए गए इलेक्ट्रोड का प्रयोग किया गया है। नैनो तकनीक से तैयार हुआ यह सेंसर शरीर के एंजाइम परीक्षणके माध्यम से नतीजे देगा।

जैसे शुगर लेवल की जांच के लिए सेंसर में ग्लूकोज ऑक्सीडेज एंजाइम का उपयोग करना होगा, ठीक इसी तरह ब्रेस्ट कैंसर और अन्य बीमारियों के लिए भी निर्धारित एंजाइम का उपयोग करना होगा। बता

दें कि शरीर में एक विशेष प्रकार के उत्प्रेरक पाए जाते हैं, जो मूल रूप से कार्बनिक अवस्था में होते हैं। इन्हें एंजाइम कहा जाता है।

डॉ. प्रवीण कौशिक ने बताया कि सेंसर का उपयोग अलग-अलग बीमारियों से संबंधित जांच के लिए किया जा सकता है, जिसके लिए इसे अलग-अलग तरह से इस्तेमाल करना होगा। सेंसर को प्रोग्राम्ड मशीन में इस्तेमाल किया जा सकेगा, जैसा कि मौजूदा किट या मशीनों में होता है, और जांच चंद सेकेंड में हो जाएगी।

## **एचआइवी संक्रमण**

**AIDS से रोजाना 300 से ज्यादा बच्चों की हो जाती है मौत (Dainik Jagran: 20191128)**

<https://www.jagran.com/world/america-more-than-300-children-die-daily-from-aids-19796362.html>

इतनी संख्या में मौत के पीछे की मुख्य वजह समुचित इलाज का नहीं मिलना है।

संयुक्त राष्ट्र, आइएनएस। एचआइवी संक्रमण से होने वाली बीमारी एड्स से विश्वभर में हर दिन 320 बच्चों की मौत हो जाती है। संयुक्त राष्ट्र की संस्था यूनिसेफ के अनुसार, 0-14 साल उम्र के एचआइवी पीड़ित बच्चों की इतनी संख्या में मौत के पीछे की मुख्य वजह समुचित इलाज का नहीं मिलना है।

भारत समेत विश्वभर के बच्चों पर एड्स की मार से संबंधित आंकड़े जारी करते हुए मंगलवार को यूनिसेफ की कार्यकारी निदेशक हेनरीटा फोर ने कहा, एचआइवी पीड़ित बच्चों में से केवल 54 फीसद को ही एंटीरेट्रोवाइरल इलाज प्राप्त हो रहा है। एड्स के खिलाफ जारी लड़ाई में विश्व ने काफी प्रगति की है, लेकिन यह अब भी पर्याप्त नहीं है। एड्स पर जारी आंकड़ों से यह भी पता चलता है कि 0-9 साल तक के बच्चों में सिर्फ 2018 में इस खतरनाक बीमारी के डेढ़ लाख से ज्यादा नए मामले सामने आए। इस तरह इस आयुवर्ग के एचआइवी पीड़ित बच्चों की संख्या 11 लाख तक पहुंच गई है।

# दवा कंपनियों मुनाफा कम करने को तैयार

नई दिल्ली | विशेष संवाददाता

राहत

देश में बिकने वाली सभी गैर अनुसूचित दवाओं पर 30 फीसदी का ट्रेड मार्जिन लागू करने को लेकर सरकार और फार्मा कंपनियों के बीच सहमति बन गई है। इस फैसले से उन 10 हजार से अधिक दवाओं की कीमत में कमी आएगी, जो अब तक मूल्य नियंत्रण से बाहर हैं।

हाल में हुई एक बैठक में दवा कंपनियों ने सरकार के प्रस्ताव पर अपनी सहमति दे दी है। मंत्रालय का तर्क था कि किसी भी कारोबार के लिए 30 फीसदी लाभ अच्छा माना जाता है। ऐसे में सभी

- गैर अनुसूचित दवाओं पर 30 फीसदी ट्रेड मार्जिन होगा
- दस हजार से ज्यादा दवाएं हो सकती हैं सस्ती

दवाओं पर प्रॉफिट मार्जिन की अधिकतम सीमा 30 फीसदी ही रखें। इससे मूल्य नियंत्रण से बाहर 10,600 दवाएं कीमतों में अब कमी आ सकती है। केंद्र सरकार ने दवाओं पर 30 फीसदी मार्जिन रखने को अपने 100 दिन के एजेंडे में शामिल किया था।

स्मार्टफोन के जरिए गर्भनाल की कर सकेंगे निगरानी

# गर्भवती मां और बच्चे का हाल बताएगा सॉफ्टवेयर



सेहत

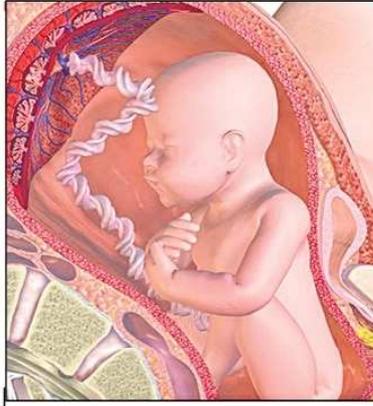
लंदन | एजेसी

स्मार्टफोन में सॉफ्टवेयर के जरिए बच्चे की गर्भनाल यानी प्लेसेंटा को स्कैन करके मां और उसके बच्चे की सेहत के बारे में पता लगाया जा सकेगा। शोधकर्ताओं ने आर्टिफिशियल इंटेलिजेंस के जरिए एक डिजिटल टूल तैयार किया है।

शोधकर्ताओं का कहना है कि गर्भनाल के जरिए मां और बच्चे के बारे में तमाम संवेदनशील सूचनाएं मिल सकती हैं। इस संबंध में एक शोध अर्जेंटिना के ब्यूनस आयर्स में इंटरनेशनल फेडरेशन ऑफ प्लेसेंटा एसोसिएशन की बैठक में पेश किया गया।

**मां और बच्चे की सही देखभाल :** न्यूट्रिशनल साइंसेज के अलीसन गरनैड ने कहा कि जहां पर संसाधन कम हैं या किसी के पास स्मार्टफोन नहीं है, वहां के लिए हमारा लक्ष्य है कि कोई प्रशिक्षित मेडिकल प्रोफेशनल फोटो खींचे, जिसका इस सॉफ्टवेयर के जरिए विश्लेषण किया जाए। इससे फौरन सूचना मिल जाएगी और उसके जरिए मां और बच्चे की सही देखभाल हो सकेगी।

**गर्भावस्था के दौरान अहम भूमिका निभाती है गर्भनाल :** दरअसल, गर्भनाल मां और बच्चे की सेहत के बारे में बेहद जरूरी जानकारी मुहैया कराने



**03** लाख महिलाओं की मौत हो जाती है हर साल प्रसव के दौरान दुनियाभर में

में सक्षम है, लेकिन इसकी जांच करने में लगने वाला समय, विशेषज्ञता और खर्च इतना ज्यादा है कि इसका इस्तेमाल नहीं हो पाता। अलीसन गरनैड कहते हैं, बच्चे और मां के लिए गर्भनाल ही गर्भावस्था के दौरान सबकुछ करती है। बच्चे को ऑक्सिजन पहुंचाने से लेकर पोषण पहुंचाने तक का काम गर्भनाल ही करती है। लेकिन, दुनियाभर में करीब 95 प्रतिशत प्रसव में गर्भनाल से जुड़ा डाटा जुटाया ही नहीं जाता।

**अभी तक नहीं मिला पेटेंट :** अभी तक इस तकनीक का पेटेंट नहीं मिला है। शोधकर्ताओं ने बताया कि इसके तहत प्रसव के बाद गर्भनाल की हर तरफ का आर्टिफिशियल इंटेलिजेंस

## गर्भनाल की भूमिका

गर्भनाल महिला के ही शरीर का ही अभिन्न अंग होता है, जो गर्भावस्था के दौरान बच्चे को सुरक्षा और पोषण देने का काम करती है। बच्चा इसी के सहारे मां के गर्भ में जीवित रहता है। गर्भवती महिला इसी नाल के माध्यम से ही अपने बच्चे से जुड़ी होती है। गर्भनाल ही बच्चे के विकास को प्रेरित करती है। यह सुरक्षा के साथ-साथ पोषण देने का भी काम करती है। यह बच्चे को कई तरह के संक्रमण से सुरक्षित रखने का काम करती है।

के जरिए विश्लेषण किया जाता है। इसके बाद उन नाजुक सूचनाओं की रिपोर्ट तैयार की जाती है जो उस मां और बच्चे की सेहत पर असर डाल सकती है। इसके जरिए यह भी पता लगाया जाता है कि गर्भ में भ्रूण को पूरा ऑक्सिजन मिल रहा है या नहीं, कहीं संक्रमण या रक्त स्राव का खतरा तो नहीं है।

इस डिजिटल टूल को स्मार्टफोन या टैब में उचित सॉफ्टवेयर के जरिए कोई भी संचालित कर सकता है। शोधकर्ताओं द्वारा पेश किए गए इस सॉफ्टवेयर में सभी गर्भनाल का परीक्षण किया जाएगा। इससे बार-बार पैथोलॉजिकल परीक्षण के लिए भेजे जाने वाले गर्भनाल का नंबर भी घटेगा।

# पहला नाइट क्लिनिक, 12 डॉक्टर करेंगे रात 8 से 12 के बीच इलाज सफदरजंग एनक्लेव में शुरू किया जा रहा है क्लिनिक

■ प्रमुख संवाददाता, नई दिल्ली

अब अपने इलाज के लिए अब न ऑफिस से छुट्टी लेने की जरूरत, न टैफिक में फंसने का झंझट, न ही समय की पाबंदी, ऑफिस से फ्री होकर रात में अपना और अपने परिजनों का इलाज ओपीडी बेसिस पर करा सकते हैं। दिल्ली में पहली बार नाइट क्लिनिक की शुरुआत की गई है। इस तरह का कॉन्सेप्ट दिल्ली ही नहीं देश में पहली बार शुरू किया गया है, यहां पर आप रात 8 से लेकर 12 बजे तक कभी भी पहुंच सकते हैं और सुपर स्पेशलिस्ट डॉक्टरों से अपना इलाज करा सकते हैं।

लगभग एक दर्जन सुपर स्पेशलिस्ट डॉक्टर एक साथ मिलकर यह सुविधा उपलब्ध करा रहे हैं। सफदरजंग एनक्लेव

## नई पहल

■ नौकरी या बिजनेस करने वालों को नहीं मिलता दिन में टाइम, इसलिए शुरू किया क्लिनिक



में शुरू किए गए इस नाइट क्लिनिक को लीड कर रहे ऑर्थोपेडिक सर्जन डॉक्टर कौशलकांत मिश्रा ने बताया अक्सर नौकरी पेशा वाले लोग अपनी बीमारी का इलाज नहीं करा पाते हैं, क्योंकि दिन में उन्हें इसके लिए ऑफिस से छुट्टी लेनी

होती है, कई बार इलाज का फॉलोअप लंबा होता है, इसलिए बार-बार छुट्टी लेना मुश्किल हो जाता है। ऐसे में कई बार बीमारी क्रॉनिक हो जाती है। अब ऐसे लोग भी अपना इलाज समय पर करा पाएंगे, उनके लिए अब रात का ऑप्शन खुल गया है।

डॉक्टर कौशल ने कहा कि लोग अपनी मर्जी से समय चुन कर आ सकते हैं। उन्होंने कहा कि रात 8 से 12 बजे के बीच लगभग एक दर्जन सुपर स्पेशलिस्ट के डॉक्टर यहां उपलब्ध होते हैं। दिन में यहां पर डॉक्टर तो नहीं होते हैं, लेकिन लेजर थेरेपी, हाइड्रो थेरेपी जैसी सुविधा मिल रही है। डॉक्टर कौशल ने कहा कि इस क्लिनिक में आर्मी, प्रीडम फाइटर, सिव्योरिटी फोर्स, नैशनल अर्वाडॉ लॉगों का इलाज फ्री में किया जा रहा है।

## Climate Crisis

**India's rain pattern getting affected by global climate crisis (Hindustan Times: 20191128)**

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

New Delhi/Mumbai : Scientists have for the first time linked a specific phenomenon brought on by the climate crisis to reduced winter rain in India -- a growing patch of warm seas in the Indo-Pacific ocean region that is causing droughts in some regions across the world and extreme floods in others.

In a report published on Wednesday, climate scientists pointed out that the Indo-Pacific warm pool, a stretch of ocean where the temperature remains above 28°C in the winter months, has doubled in size between 1981 and 2018. This, in turn, has “warped” the Madden-Julian Oscillation (MJO), a band of rain clouds that moves eastwards over the tropics and is responsible for most weather variations in the region -- including the south-west and north-east monsoons.

The study, published in the journal *Nature* and authored by scientists from Pune’s Indian Institute of Tropical Meteorology (IITM), United States’s National Oceanic and Atmospheric Administration, University of Washington and University of Tokyo, said that the changes to MJO have a cascading effect that triggers extreme weather events across the globe.

The MJO season begins in October and lasts till April, and the report contends its “warping” has a direct link to lower rainfall in the winter months in north India. Experts separately say the effects also spill over to the summer monsoon, which is crucial for India’s agriculture and economy.

The landmark study comes less than a week before 197 countries gather for the UN Climate Conference (COP25) in Madrid to negotiate on rules around the functioning of carbon markets, how vulnerable countries can be compensated for the loss caused by climate impact, and to decide on how findings of Intergovernmental Panel on Climate Change (IPCC’s) 2019 report on land and oceans can be taken on board.

“The MJO location-specific changes in terms of their lifespan has altered weather patterns across the globe because it changes atmospheric circulation that can enhance or suppress tropical rainfall variability, modulate or trigger extreme weather events including hurricanes, droughts, flooding, heat waves and cold surges,” said Roxy Mathew Koll, principal investigator and climate scientist, IITM.

Previous studies have established that an increase in greenhouse gas emissions due to human activities has led to the warming of the Indo-Pacific pool, the study noted.

The study looked at climate model simulations between 1981 and 2018 and found that MJO clouds now remain in Indian Ocean for four fewer days (from an average of 19 days to 15 days). In turn, they have spilled over to the west Pacific region, where they linger for five more days (from an average of 18 days to 23 days).

MJO travels 12,000-20,000km mainly over the Indo-Pacific warm pool and modulates the El Niño Southern Oscillation, tropical cyclones and the monsoons, contributing to severe weather events over Asia, Australia, Africa, Europe and the Americas.

Koll said changes in MJO can affect western disturbances that bring rain to north India and may also reduce the span of summer monsoon rains and cause extreme rainfall events in short duration.

Raghu Murtugudde, professor of atmospheric and oceanic science and earth system science at the University of Maryland, who was not involved in the study, said the report is critical for the Indian monsoon because the MJO season (October to April) dovetails the monsoon season, also known as the Monsoon Intraseasonal Oscillation or MISO season (May to September).

“The monsoon is all about MISOs or active/break periods. Since the variability and change in the monsoon are all manifest in active/break periods and our agriculture depends on active/breaks, this MJO story raises new questions about how MISOs are responding to the Indo-Pacific warm pool changes,” said Murtugudde. “Now the question is to see how MJO changes are related to the MISO changes and what it means for the future of the monsoon.”

A third scientist supported the concerns. “It’s quite possible that changes in MJO are impacting the north-east monsoon. It definitely has a big impact on our summer monsoon which is being documented. MJO is one of fundamental oscillations that impacts the intra-seasonal variability of southwest monsoon,” said SK Dash, climate scientist, IIT Delhi.

In addition to India, the impact spreads to central and east Pacific, east Africa, the Yangtze basin in China, and the east and west coasts of the United States. It is also linked to enhanced rainfall over the Maritime Continent–west pacific region, the Amazon basin in South America, south-west Africa and northern Australia.

The study links MJO changes to California droughts in 2013-2014, South-east Asia floods in 2011 and East Africa droughts in 2011, which occurred during years when the MJO phase duration was longer over the west pacific region. Extreme flooding events in Brazil, such as the 2011 Rio de Janeiro floods are also linked to longer MJO.

## **UNEP Emissions Gap report**

**India fourth largest emitter of greenhouse gases: UN report (Hindustan Times: 20191128)**

<https://indianexpress.com/article/india/india-fourth-largest-emitter-of-greenhouse-gases-un-report-6140272/>

The top four emitters (China, USA, EU and India) contribute to over 55 per cent of the total emissions over the last decade, excluding emissions from land-use change such as deforestation, the report states.

Aramco faces serious risks from climate change, report says

According to the report, unless global greenhouse gas emissions fall by 7.6 per cent each year, the world will fail to meet the 1.5°C temperature goal of the Paris Agreement. (File)

India is the fourth largest emitter of greenhouse gases, according to a new report called 'Emissions Gap Report' from the UN Environment Programme, which was released on Tuesday.

According to the report, unless global greenhouse gas emissions fall by 7.6 per cent each year, the world will fail to meet the 1.5°C temperature goal of the Paris Agreement. The report is one of several studies released ahead of UN climate talks in Madrid next week aimed at spurring world leaders to limit climate change.

The top four emitters (China, USA, EU and India) contribute to over 55 per cent of the total emissions over the last decade, excluding emissions from land-use change such as deforestation, the report states. If land-use change emissions were included, the rankings would change, with Brazil likely to be the largest emitter. The largest share of emissions come from the energy sector and its fossil fuel emissions. Industry produces the next largest footprint, followed by forestry, transport, agriculture and buildings, it said.

The report, however, adds that India is among a small group of countries that are on track to achieve their self-declared climate targets under the Paris Agreement with their current policies in place. However, it mentions that there are uncertainties regarding India's emissions future, the biggest of which is how rapidly the country's economy will grow.

## **A bleak warning (The Indian Express: 20191128)**

<https://indianexpress.com/article/opinion/editorials/un-emission-report-environment-climate-change-6140131/>

UNEP Emissions Gap report is a serious indictment of how little has been done to combat and contain climate change.

Fifteen of the 20 wealthiest nations have no timeline for net zero target GHG emissions. Just three nations — India, Russia and Turkey — are on track to achieving their emissions plans.

The 10th UN Environment Programme Emissions Gap report, released on Tuesday, is blunt: “The summary findings are bleak”, it says. The annual report compares the direction in which global greenhouse gas emissions are headed vis-a-vis where they ideally need to be if the world is to avoid the worst scenarios. Alarming, global emissions have been increasing by approximately 1.5 per cent per year for the past decade, the report notes. That means temperature increases of nearly 4°C by 2100 or “wide-ranging and destructive climate impacts”. Even if all emissions promises by countries are met, the world will still be warmer by more than double the 1.5 degree-target by 2100.

Many countries across the world can testify to the bleakness that has set in on the issue. Just this month, the regional council in Italy’s Veneto region, which includes Venice, reportedly rejected policy amendments that were being introduced to tackle climate change. The same day, the council’s chamber was inundated by flood waters, a member, Andrea Zanoni, revealed in a Facebook post. The symbolism would not be lost on countries across the world. California and Australia were ravaged by major wildfires and bushfires a few months ago: Such massive fires have become so rampant that, internationally, countries have started competing for plane and helicopter contracts to douse domestic fires. The EU has developed a reserve fund this year for firefighting aircraft with contracts that allow deployments across international borders. Last month, a study published in Nature warned that the number of people inhabiting low-lying regions that will flood annually — as the world heats up and ocean levels rise — is three times higher than was previously thought: Approximately 300 million people worldwide will be at risk by 2050.

In this backdrop, the findings of the emissions report are yet another stark warning and a serious indictment of how little has been done to contain climate change. Fifteen of the 20 wealthiest nations have no timeline for net zero target GHG emissions. Just three nations — India, Russia and Turkey — are on track to achieving their emissions plans. However, the report notes, this is because the targets they set for themselves under the Paris Agreement were too low to begin with. The role of the US, particularly, assumes significance: It has started the process to pull out of the Paris Climate Agreement, while, reportedly, its energy-related carbon dioxide emissions have seen a sharp spike in 2018 under President Trump. This is after previous years of gradual decline. One silver lining, as the report notes: Climate

protests by young people, who are making it an issue beyond politics, in their efforts to secure a better future for all.

## **Air Pollution**

**New less polluting fogging technique being considered by municipal bodies (Hindustan Times: 20191128)**

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

New Delhi : In view of the heavy pollution caused by conventional fogging mosquito control techniques that uses diesel as solvent for insecticides, Delhi's municipal bodies are considering a new device called Ultra Low Volume (ULV) that uses water instead.

Insecticides are poisonous to humans and thus have to be diluted in a solvent before spraying. Conventional techniques uses a mixture that is 95% diesel and 5% insecticide. The new technique will have similar ratios but with water replacing diesel. Neither would it have the signature "fog" that the diesel-based spraying machines leave behind.

According to municipal officials, they had thought about deploying ULV device earlier too. But one of the things that stopped them was public perception.

"Diesel-based fogging causes fumes, the fog that the people see after spraying, which leads to public satisfaction that the municipalities are doing something to protect them," said Dr. Pramod Verma, Deputy Health Officer of the North Municipal Corporation of Delhi. "Often, fogging is a tool for political leaders to appease residents of their constituency though we are aware that diesel fogging is not 100% effective outdoors. However, ULVs only create a 'water mist' which is invisible, and hence does not create that positive psychological effect that people seek," he explained.

The ULV machine is extensively used in the United States, and the National Vector-Borne Disease Control Programme of India, which advises municipalities across the country on medicines and techniques to use for mosquito control, also allows it, municipal officials said.

"At least 95% of the mixture in conventional fogging devices is diesel and only 5% is the insecticide — malathion or cyphenothrin, compounds which kill adult mosquitoes on contact," said a senior public health official of the South Delhi Municipal Corporation (SDMC), who requested to be named. "When this mixture is heated at temperatures like 700°C and sprayed at high pressure, the diesel turns into vapours and cause air pollution"

SDMC councillor and standing committee member, Narender Kumar, also recently recommended it in a meeting of the corporation. “We are aware how severe Delhi’s air pollution situation is right now. If we have an option like ULVs, which does not use diesel, we must explore it,” Kumar said at the meeting.

Other municipal officials, though, pointed out issues with ULV which have been forbidding the technology, though, it has existed for several years now. Another issue with ULVs is that they do well in colder climates, like in USA, where the suspended water droplets don’t evaporate quickly and stay afloat in the air to kill mosquitoes. “In temperate countries like ours, the water dries up quickly, so more insecticide has to be added per litre of water for it to be effective,” Dr Somashekhar of east Delhi municipality.

**After light rain, Delhi sees November’s first ‘moderate’ air day (The Indian Express: 20191128)**

<https://indianexpress.com/article/cities/delhi/after-light-rain-delhi-sees-novembers-first-moderate-air-day-6140154/>

Weather and air quality experts have credited this improvement in air to a reduction of stubble burning in Haryana and Punjab, coupled with favourable meteorological conditions.

The Western Disturbance’s influence caused precipitation in the capital and its North Western regions. (Express photo by Praveen Khanna)

Scattered showers and strong surface level winds brought down pollution levels and helped improve Delhi-NCR’s air quality Wednesday.

A ‘moderate’ average air quality index (AQI) was recorded in the city and nearby NCR towns Wednesday — a first this month, as there have been seven ‘severe’, 11 ‘very poor’ and eight ‘poor’ air days so far.

Delhi’s AQI Wednesday was 134 — a significant improvement from 270 the previous day, as per the Central Pollution Control Board (CPCB). Among the NCR towns, the AQI of Gurgaon was 104, Noida’s was 115 and Ghaziabad’s was 143.

Weather and air quality experts have credited this improvement in air to a reduction of stubble burning in Haryana and Punjab, coupled with favourable meteorological conditions.

“Under the influence of the Western Disturbance, precipitation recorded in Delhi and its North Western regions has led to washing out of suspended pollutants and rapid improvement in air quality,” said a report by the Centre’s weather and air monitoring agency SAFAR.

Kuldeep Srivastava, a scientist at the India Meteorological Department (IMD), said showers under the WD were recorded in parts of Haryana Tuesday and Wednesday, as a result of which farm fires and their emissions have reduced.

Delhi’s air quality has improved significantly in the past week.

SAFAR estimated that stubble burning contributed 2% to PM2.5 levels in Delhi Wednesday, which is expected to increase to 4% Thursday. It has also recorded a declining trend in farm fires.

Wind direction over Delhi is Northwesterly, which is favourable for transport of stubble burning emissions, but light surface winds expected over the next few days would keep pushing pollutants out, Srivastava said.

The windspeed peaked around 15 km per hour Wednesday and is expected to reduce to around 8 km per hour Thursday, the IMD official said.

Rainfall was recorded more in the city’s north Wednesday as compared to the south, Srivastava said, but it remained in the light to drizzle range.

A CPCB official said rain helps settle dust and other particulates that are suspended in the air and increases the duration between their re-suspension.

Real time air quality at 28 out of 31 monitoring stations in Delhi as of 8 pm Wednesday was in the ‘moderate’ category, with the remaining three stations — Najafgarh, Vivek Vihar and Sonia Vihar — recording AQI in the ‘satisfactory’ range.

As per a SAFAR forecast, the capital’s air quality will likely remain in the ‘moderate’ category Thursday and may deteriorate to the ‘poor’ range by Friday.

## **Healthcare**

### **No MRI facility in Jhajjar district, patients bank on private hospitals (The Tribune: 20191128)**

<https://www.tribuneindia.com/news/no-mri-facility-in-jhajjar-district-patients-bank-on-private-hospitals/867023.html>

Long wait: Patients at the civil hospital in Jhajjar which is facing staff crunch.

As many as 41 posts of medical officer are lying vacant in the district and there are no specialists to treat skin diseases and psychiatric disorders at the civil hospital in Jhajjar city, forcing patients to approach private hospitals.

The district has three civil hospitals in Jhajjar, Bahadurgarh and Beri and six community health centres (CHCs) in Chhara, Dighal, Jamalpur, Dhakla, Dubaldhan and Badli towns and 27 public health centres (PHCs) and polyclinics.

In all, 108 posts of doctors have been sanctioned for all three civil hospitals. As many as 16 posts in Bahadurgarh, four in Beri and two in Jhajjar civil hospital are lying vacant. Three posts of doctors in Dhakla CHC, two in Jamalpur CHC and one in Dighal CHC haven't been filled while no doctor is available at Barhana and Badli PHCs.

The deputy civil surgeons posted at the district headquarters are overburdened too as four posts are vacant.

There is no MRI facility in any of the healthcare centres in the district. The patients are referred to PGIMS in Rohtak for MRI examination but in most cases the patients end up going to private hospitals.

The ultrasound facility has been provided at civil hospitals in Jhajjar and Bahadurgarh but since there is just one radiologist in each centre, patients have to wait for long to avail the facility.

## **Food safety**

### **Cleaning the dairy (The Tribune: 20191128)**

<https://www.tribuneindia.com/news/editorials/cleaning-the-dairy/867012.html>

It is the right of the consumer to get pure milk

MILK is the staple drink in Punjab and most Punjabis gulp down glassfuls of it in the firm faith that they owe their good health and strength to the nutritious properties of this farm-fresh dairy product. However, this belief has taken a beating over the past few years as what reaches their tables is not quite white. Horrific instances of milk being not just diluted with water but also adulterated to make it thicker and viscous with substances that may even be carcinogenic have become common. Pure milk is rare to procure. Unscrupulously greedy elements, having scant regard for food safety norms, make hay as the huge milk economy ensures an easy money-making opportunity. With more than 60 per cent of the lily-white samples failing the purity test, the taint on Punjab is the blackest in the country. Concerned — and rapped by the High Court and authorities — the state has under its Mission Tandrust programme conducted thousands of raids to check this nefarious malpractice that is playing havoc with the health of the unsuspecting consumers.

The tie-up of the Food Safety and Standards Authority of India (FSSAI) with Punjab for its pilot project aimed at educating farmers on milk contaminants holds the promise of supplementing the government's efforts. The pact will yield good practices by the suppliers if followed by stringent measures to ensure excellence of milk and milk products. In a bid to track the quality supplied by the unorganised vendors, the FSSAI also plans to certify their products after verification.

Incentives to the dairy farmers abiding by safety standards would hasten the process towards wholesome products. The phenomenal success of the cooperative model, Amul, pioneered by Verghese Kurien, holds the torchlight. He transformed India from a milk-deficit nation into the world's largest milk producer by making the milkmen a partner in the company. The authorities endeavouring to clean the system would do well to remember his advice: 'Any sensible government must learn to unleash the energy of its people and get them to perform instead of trying to get a bureaucracy to perform.'

## **Osteoporosis**

### **Osteoporosis: Could selenium reduce risk? (Medical News Today: 20191128)**

<https://www.medicalnewstoday.com/articles/327122.php#5>

A recent study from China finds an association between dietary intake of selenium and osteoporosis risk. Although the authors cannot determine whether the link is causal, they call for more investigation.

A new study asks whether selenium intake might link to osteoporosis risk.

Throughout life, the body continuously breaks down bone, reabsorbs it, and remakes it. In osteoporosis, the reforming of bone cannot keep up with the rate of bone breakdown.

This process means that, over time, bones become weaker and more prone to fracture. Osteoporosis predominantly affects older adults, and, globally, an estimated 200 million Trusted Source people have osteoporosis.

The condition affects roughly 1 in 3 females over 50 years of age, while 1 in 5 males will have fractures that osteoporosis relates to during their lifetime.

There are some risk factors for osteoporosis that people cannot avoid, such as advancing age and sex. But experts have also identified some modifiable risk factors, for instance, smoking tobacco and drinking alcohol increase the risk.

Scientists also believe that dietary factors might play a part. To date, most research looking at nutrition and osteoporosis has concentrated on calcium Trusted Source because of its pivotal role in bone health.

The authors of the most recent study, however, believe that other micronutrients could influence osteoporosis risk. They decided to focus on selenium. The scientists published their results in the journal BMC Musculoskeletal Disorders.

What is selenium?

Selenium is a trace mineral that is essential for human health. It plays a part in many systems of the body and is present in a wide range of foods, including fish, shellfish, red meat, grains, eggs, chicken, liver, and garlic.

Although a handful of earlier studies have looked at selenium's impact on osteoporosis, the evidence has not been conclusive.

To address this gap in our knowledge, the latest researchers took data from 6,267 participants who visited the Department of Health Examination Centre of Xiangya Hospital, Central South University, China.

Registered nurses engaged with all participants and collated information about their lifestyles and demographics. All participants were 40 years of age or older and completed detailed food frequency questionnaires.

Importantly, the scientists also took note of other parameters that can influence osteoporosis, such as drinking, smoking status, body mass index (BMI), and level of physical activity.

### Selenium and osteoporosis

Overall, osteoporosis was present in 9.6% of participants — 2.3% in males and 19.7% in females. Using the questionnaire data, the scientists split the participants into four groups, which they ranked for the highest to the lowest selenium intake.

As they expected, individuals with the lowest levels of dietary selenium had the highest risk of developing osteoporosis. The authors observed a dose response relationship; in other words, selenium intake had a negative correlation with osteoporosis risk — the more an individual consumed, the lower their risk.

Even after controlling for factors such as age, gender, and BMI, the relationship was still significant; it also held true for both males and females. The authors conclude:

"The findings of our study may give a hint of the pathogenesis of [osteoporosis], and future studies of dietary intake, including [selenium] supplementary intake, on the risk of [osteoporosis] are warranted."

In their paper, the authors discuss some mechanisms by which selenium might influence osteoporosis risk. They explain how the activity of immune molecules, such as cytokines, encourage the progression of osteoporosis and that selenium may inhibit these molecules.

Secondly, selenium forms part of selenium dependent antioxidant enzymes, which mop up reactive oxygen species within cells.

Reactive oxygen species occur as a byproduct of oxygen metabolism and play useful roles in the body. However, if they build up, they cause oxidative stress, which can damage cells. Therefore, lower levels of selenium might increase oxidative stress.

This is important because, as the authors explain, there is some evidence <sup>Trusted Source</sup> that oxidative stress might influence the progression of osteoporosis.

### Limitations and the future

The authors believe that theirs is the first study to relate dietary selenium intake to osteoporosis directly. Although they used a relatively large sample size and accounted for a wide range of variables, there are still significant limitations.

For instance, any study that is reliant on self-reported food intake is open to error — human memory is certainly not infallible. The authors also explain that levels of selenium in food can vary, and that preparation methods also influence how much selenium is available.

Also, in observational studies such as this, it is not possible to confirm a causal relationship between dietary selenium and disease outcomes; there is always the possibility that other factors are influencing the results.

As the average age of the population slowly rises, osteoporosis is becoming more prevalent. Understanding how we can reduce risk is vital, and more work is sure to follow.

## **Dementia**

**Extra virgin olive oil may protect against various dementias (Medical News Today: 20191128)**

<https://www.medicalnewstoday.com/articles/327141.php#5>

New research in mice suggests that adopting a diet rich in extra virgin olive oil can prevent the toxic accumulation of the protein tau, which is a hallmark of multiple types of dementia.

Extra virgin olive oil 'has many benefits for health.'

Due to its monounsaturated fatty acids, or "good" fats, extra virgin olive oil is known for its ability to lower the risk of high cholesterol and heart disease.

Recently, however, several studies have suggested that extra virgin olive oil also has neuroprotective and cognitive benefits.

For instance, a 2012 study in mice found that the oil improves rodents' learning and performance in memory tests.

The presumed reason for these findings is that extra virgin olive oil is rich in polyphenols. These are powerful antioxidant compounds that may reverse disease- or aging-related learning and memory impairment.

A couple of years ago, a study that Medical News Today reported on found that extra virgin olive oil reduced early neurological signs of Alzheimer's disease in mice.

The extra virgin olive oil intervention improved autophagy — that is, brain cells' ability to eliminate toxic waste — and helped maintain the integrity of the rodents' synapses, which are the connections between neurons.

Dr. Domenico Praticò — a professor in the Departments of Pharmacology and Microbiology and the Center for Translational Medicine at the Lewis Katz School of Medicine at Temple University in Philadelphia, PA — spearheaded that research.

He has recently led a new team in a study of the neurological benefits of extra virgin olive oil. As part of this study, the researchers looked at the oil's effect on "tauopathies." These are age-related cognitive conditions wherein the protein tau accumulates to toxic levels in the brain, triggering various forms of dementia.

Dr. Praticò and his colleagues have published their findings in the journal *Aging Cell*.

Studying the tau protein in mice

The researchers used a mouse model of tauopathy. They genetically tweaked the rodents so that they were prone to accumulate excessive amounts of the otherwise normal protein tau.

In Alzheimer's and other forms of dementia, such as frontotemporal dementia, the tau protein accumulates inside neurons in the form of toxic "tangles."

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By contrast, in a healthy brain, normal levels of tau help stabilize the microtubules, which are supportive structures for neurons.

In tauopathies, the buildup of tangles inside neurons stops the nerve cells from receiving nutrients and communicating with other neurons. This eventually leads to their death.

In this study, the mice prone to accumulations of tau consumed a diet high in extra virgin olive oil from the age of 6 months. According to some estimates, this is the equivalent of around 30 years of human age.

Control mice were also prone to tau accumulations but consumed a regular diet.

Olive oil means 60% less tau, better memory

Around a year later — which would equate to around 60 years of human age — the experiments revealed that the tauopathy-prone rodents had 60% fewer tau deposits than the control rodents, which had not received an extra virgin olive oil-enriched diet.

Mice that had received extra virgin olive oil also performed better in standard maze and novel object recognition memory tests.

Furthermore, brain tissue sample analyses revealed that the mice who consumed the extra virgin olive oil had better synapse function than the control mice, as well as better neuroplasticity.

The analyses also revealed an increase in a protein called complexin 1. This is a "presynaptic" protein key for maintaining healthy synapses.

"Our findings demonstrate that [extra virgin olive oil] directly improves synaptic activity, short-term plasticity, and memory while decreasing tau neuropathology in the [tau-prone] mice," conclude Dr. Praticò and team, adding:

"These results strengthen the [healthful] benefits of [extra virgin olive oil] and further support the therapeutic potential of this natural product not only for [Alzheimer's disease] but also for primary tauopathies."

Olive oil protects against various dementias

"[Extra virgin olive oil] has been a part of the human diet for a very long time and has many benefits for health, for reasons that we do not yet fully understand," explains Dr. Praticò.

"The realization that [extra virgin olive oil] can protect the brain against different forms of dementia gives us an opportunity to learn more about the mechanisms through which it acts to support brain health," he says, highlighting some directions for future research.

"We are particularly interested in knowing whether [extra virgin olive oil] can reverse tau damage and ultimately treat tauopathy in older mice," concludes Dr. Praticò.

## **E. coli outbreak**

**E. coli outbreak: CDC warn about romaine lettuce from Salinas, CA (Medical News Today: 20191128)**

<https://www.medicalnewstoday.com/articles/327137.php#4>

The Centers for Disease Control and Prevention (CDC) have issued a food safety alert in light of a recent Escherichia coli outbreak in the United States. We outline its main takeaways.

The CDC warn that consuming romaine lettuce grown in Salinas, CA, may be dangerous.

Between September 24th and November 10th of this year, people in 16 states have developed symptoms of E. coli Trusted Source, such as severe stomach cramps, diarrhea, and vomiting.

The source of this outbreak appears to be romaine lettuce from the Salinas, CA, growing region.

Since the start of the outbreak, 40 people have been diagnosed with E. coli infection, 27 of whom have been hospitalized.

Five of these people have developed a serious complication called hemolytic uremic syndrome, which is a type of kidney failure. No related deaths have occurred.

Investigators from the Food and Drug Administration (FDA) have tracked the source of the outbreak to romaine lettuce. It appears to be contaminated with the same strain of coli O157:H7 that triggered similar outbreaks in 2017 and 2018.

However, the FDA have not yet linked any specific romaine lettuce grower, supplier, distributor, or brand to the outbreak.

Until the authorities find out more, the CDC have issued a food safety alert in which they urge consumers to avoid romaine lettuce from the Salinas, CA, growing region.

Below, we summarize the main takeaways of the CDC's announcement Trusted Source, which can be read in full on the organization's website.

'Don't eat it, and throw it away'

The CDC strongly advise people not to eat any romaine lettuce grown in the Salinas region. This includes "whole heads of romaine, hearts of romaine, and packages of precut lettuce and salad mixes that contain romaine, including baby romaine, spring mix, Caesar salad, and organic romaine."

The CDC also urge retailers not to sell and restaurants not to serve this lettuce.

People should not eat romaine lettuce that has "Salinas" on its label, whether this is on its own or next to another location's name. They should throw the lettuce away immediately. This applies to consumers, restaurants, and retailers.

Furthermore, the CDC advise that if the lettuce is not labeled with a growing region, "Don't eat it, and throw it away." They continue: "If you don't know if the lettuce is romaine or whether a salad mix contains romaine, don't eat it or serve it. Throw it away."

Refrigerator drawers and shelves that have held romaine lettuce need to be thoroughly washed and sanitized, the agency adds.

Finally, the U.S. Department of Agriculture (USDA) have taken off the market some products that may be contaminated because they contain romaine lettuce. The full list of these products is here.

Dr. Robert Tauxe, who is the director of the CDC Division of Foodborne, Waterborne, and Environmental Diseases, comments on the outbreak.

He says, "We are concerned about the potential for contaminated lettuce on store shelves and in people's refrigerators."

"Heading into the Thanksgiving holiday, it is critically important to avoid buying or eating romaine lettuce from the Salinas growing area so you can protect yourself and your family."

Dr. Robert Tauxe

The CDC note that the investigation into this E. coli outbreak is ongoing and that the health protection agency will continue to update the public as soon as they have more information.

## **Blood Pressure**

### **Deportation fear likely to increase high blood pressure risk: Study (New Kerala: 20191128)**

<https://www.newkerala.com/news/read/254961/deportation-fear-likely-to-increase-high-blood-pressure-risk-study.html>

Washington D.C , Nov 27 : In a recent study it has been found that the fear and worries associated with deportation may have negative impacts of developing high blood pressure over a four-year period.

The study was published in the journal, 'JAHA Journal of the American Heart Association.'

In a four-year study of Mexican-born women who reside in an agricultural area of California, the worry of deportation appears to double their risk of developing high blood pressure.

The researchers followed 572 women (average age of 39 years; 99 per cent were born in Mexico) participating in a long-term study of Mexican women and their children in farmworker families in the Salinas Valley region of California.

"Our findings suggest that concerns around immigration policies and enforcement may have potentially negative impacts on the long-term cardiovascular health of immigrants and their families and community," said Jacqueline M. Torres, lead author at the University of California, San Francisco.

As part of a baseline assessment in 2012-2014, the women in the study were asked to rate their concern about deportation for themselves or others as not too much (28 per cent), a moderate amount of worry (24 per cent) or a lot of worries (48 per cent). At the baseline assessment, worry about deportation was associated with steeper increases in systolic (top number) blood pressure. However, there was no significant difference in the proportion of women diagnosed with high blood pressure.

"Given what we learned in this first study, we are concerned about the long-term effects of deportation worry and its impact on both mental and physical health," Torres said.

In the four-year, follow-up with evaluations conducted between 2014-2016 and 2016-2018, the researchers found

A steeper initial increase in systolic blood pressure and mean arterial pressure in women who reported higher deportation worry at their baseline assessment;

No change in the association between deportation worry and higher body mass index (BMI) and waist circumference over four-years; and

Among the 408 women who did not have high blood pressure at the initial assessment, women with moderate or high deportation worry were twice as likely to be diagnosed with high blood pressure, compared to those expressing little worry during the four-year follow-up period (either self-reported, a formal diagnosis or a blood pressure greater than 130mm Hg systolic or 80 mmHg diastolic at the evaluation).

"Just as clinicians may think about the role of other stressors impacting the lives and health of their patients, this study suggests they may also need to consider the impact of policies such as immigration on stress levels and the subsequent effect on outcomes related to blood pressure," explained Torres.

The researchers cautioned that the study contained only women from one part of the country, and the results may not be generalizable to other groups. However, they noted there is also reason to believe they may have underestimated the effect that living in fear of deportation has on cardiovascular risks like high blood pressure.

## **Diet/Nutrition**

### **Health diet may slow development of memory problems (New Kerala: 20191128)**

<https://www.newkerala.com/news/read/254764/health-diet-may-slow-development-of-memory-problems.html>

New York, Nov 27 : A heart-healthy diet and aerobic exercise may slow development of memory problems, a new study suggests.

Cognitive impairment without dementia (CIND), or mild cognitive impairment, is a condition that affects your memory and may put you at risk for Alzheimer's disease and dementia, the researchers said.

For the study, published in the Journal of the American Geriatrics Society, researchers from the Duke University examined two potential ways to slow the development of CIND based on what we know about preventing heart disease.

The research team had a theory That the healthy lifestyle behaviours that slow the development of heart disease could reduce heart disease risk and also slow cognitive decline in older adults with CIND.

These behaviours include regular exercise and a heart-healthy diet, such as the DASH (Dietary Approaches to Stop Hypertension) diet.

In order to investigate their theory, the researchers designed a study titled "Exercise and NutritionaL Interventions for coGnitive and Cardiovascular HealTh EnhaNcement" (or ENLIGHTEN for short).

The goal of the study was to examine the effects of aerobic exercise and the DASH diet on cognitive functioning in older adults with CIND. The study examined 160 adults 55-years-old or older.

The study participants were older adults who didn't exercise and had memory problems, difficulty thinking, and making decisions. They also had at least one additional risk factor for heart disease, such as high blood pressure, high cholesterol, diabetes, or other chronic conditions.

Participants took a number of tests to measure their heart disease risk factors and cognitive ability.

Researchers also assessed participants' dietary habits and ability to perform daily activities.

The participants were then randomly assigned to one of four groups a group doing aerobic exercise alone, a group following the DASH diet alone, a group doing aerobic exercise and following the DASH diet combined, or a group receiving standard health education.

At the conclusion of the six-month intervention and assessment, participants were free to engage in whatever activity and dietary habits they desired, with no restrictions.

The results of the research team's study showed that exercise improved the participants' ability to think, remember, and make decisions compared to non-exercisers, and that combining exercise with the DASH diet improved the ability to think, remember, and make decisions, compared to people who didn't exercise or follow the diet.

The researchers concluded that their findings are promising proof that improved ability to think, remember, and make decisions can last one year after completing a six-month exercise intervention. They suggested that further studies would be needed to learn more.

**Drinking 1-4 cups coffee daily reduces metabolic syndrome: Study (New Kerala: 20191128)**

<https://www.newkerala.com/news/read/254735/drinking-1-4-cups-coffee-daily-reduces-metabolic-syndrome-study.html>

Washington D.C , Nov 27 : Coffee comes with the potential of reducing the risk of developing a major cardiovascular issue which is known for affecting more than one billion people across the globe, says a recent study.

A report from the Institute for Scientific Information on Coffee (ISIC) highlights the potential role of coffee consumption in reducing the risk of developing MetS (metabolic syndrome), that increases the risk of cardiovascular problems, including coronary heart disease and stroke. The report, titled 'Coffee and Metabolic Syndrome A review of the latest research', summarises the research discussed at a satellite symposium hosted by ISIC at the 13th European Nutrition Conference organised by the Federation of European Nutrition Societies (FENS) in Dublin, Ireland.

During the symposium, Assistant Professor Giuseppe Grosso reviewed his own scientific research on the association between coffee consumption and MetS in Polish and Italian cohorts and explored the potential mechanistic perspectives behind the inverse association.

His research suggests that polyphenols contained in coffee may be involved in the inverse association, specifically phenolic acids and flavonoids.

He also reviewed research that suggests that moderate coffee consumption is associated with a reduction of CVD, cancer, all-cause mortality and type 2 diabetes.

Associate Professor Estefania Toledo reviewed meta-analyses considering associations between coffee consumption and MetS and discussed work in a Mediterranean cohort.

Her research into the SUN (Seguimiento University of Navarra) cohort involved 22,000 people and specifically considered caffeinated and decaffeinated coffee.

The study concluded that moderate coffee consumption (1-4 cups per day) was associated with reduced risk of MetS, whilst higher intakes were not. This was reported for both regular and decaffeinated coffee.

The study presented at -- FAPESP Week France-- highlighted that drinking 1-4 cups of coffee per day is associated with a reduced risk of MetS in observational studies.

Specific conditions of MetS, namely type 2 diabetes and hypertension, are also inversely associated with coffee consumption. Associations with obesity are less clear.

The inverse association between coffee consumption and metabolic syndrome was shown in both men and women. Meta-analyses have suggested that moderate consumption of both caffeinated and decaffeinated coffee may be associated with a reduced risk of metabolic syndrome.

## **Leukaemia**

**Scientists discover new approach to treating incurable leukaemia in children (New Kerala: 20191128)**

<https://www.newkerala.com/news/read/254560/scientists-discover-new-approach-to-treating-incurable-leukaemia-in-children.html>

Washington D.C , Nov 26 : Acute lymphoblastic leukaemia (ALL) is a form of blood cancer that primarily affects children and young people.

It involves large quantities of malignant progenitor cells building up in a person's blood instead of healthy white blood cells. This is often caused by a change in genetic material, with two chromosomes fusing together to create new abnormal genes that disrupt the system controlling normal blood development.

Such types of leukaemia are often extremely resistant and cannot be cured with intensive chemotherapy or stem cell transplantation. In search of new ways to tackle this problem, a team of scientists from the University of Zurich and the University Children's Hospital Zurich has been scrutinizing the molecular causes of this disorder. The research was presented in the journal Cancer Cell.

Abnormal protein activates genes at the wrong time

For the purpose of their investigation, the researchers - led by Jean-Pierre Bourquin and Beat Bornhauser - analyzed a protein called TCF3-HLF, which is typically associated with this type of leukaemia. This protein does not occur naturally; it is produced through the fusion of two chromosomes and contains elements of what are known as transcription factors, which activate the transcription of certain genes. The analyses revealed that the abnormal protein TCF3-HLF also activates a whole range of genes, but it does so in the wrong context and at the wrong point in the blood development process. This triggers the formation of malignant white blood cells and causes leukaemia. "Our research shows that the abnormal protein binds

to almost 500 regulatory elements in the genetic material of the human leukaemia cells, activating hundreds of genes by mistake," explains Yun Huang, lead author of the study.

#### Leukaemia triggers figured out using "gene cutter"

The researchers also discovered that abnormal protein does not act alone. In fact, it gathers more than 100 other proteins around it, which help to activate the genes. "We investigated the function of the individual proteins in this genetic machinery and used this to identify key elements that could be targeted through therapy," explains Huang. He and his colleagues used the CRISPR/Cas9 method, sometimes referred to as a "gene cutter", to detach the specific parts they had identified from the machinery. As a result, they managed to find eleven critical factors that are crucial to the build-up of malignant abnormal blood cells behind leukaemia.

#### The new substance kills cancer cells in a targeted way

One of the essential components now identified is the protein EP300, a cofactor that boosts gene activation. An experiment with mice indicated that EP300 could be a very promising target for therapy. For this investigation, the researchers used a new kind of substance called A-485, which is known to bind to EP300 and inhibit its activity. When A-485 was administered to mice carrying human leukaemia cells, the malignant cells died off. "It is therefore possible, in principle, to stop the fundamental driving force behind this leukaemia directly and thus develop a targeted type of therapy," says research group leader Jean-Pierre Bourquin. "The important thing now is to build a fuller picture of what goes wrong so that we can investigate the best possible way to combine specific modes of an attack like this." Given that other forms of leukaemia are caused by similar mechanisms, it may also be possible to identify a common denominator for developing new drugs to combat cancer.