



## DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Wednesday 20210210

### कोविड-19

सुधरते हालात, लेकिन चिंता कायम (Hindustan: 20210210)

<https://www.livehindustan.com/blog/story-hindustan-opinion-column-10-february-2021-3844435.html>

देश में कोविड-19 का प्रसार क्या थमता दिख रहा है? तथ्य बताते हैं कि हर दिन नए मामले अब 10 हजार से भी कम हो गए हैं। बीते सात दिनों का रोजाना का औसत 12 हजार से नीचे आ चुका है। इतना ही नहीं, पिछले दस दिनों से हर रोज कोरोना की जंग हारने वाले मरीजों की संख्या भी 150 से नीचे लाने में हम सफल हुए हैं। कल सरकार की तरफ से यह भी कहा गया कि पिछले 24 घंटे में 15 राज्यों व केंद्र शासित क्षेत्रों में कोरोना से एक भी मौत नहीं हुई है, जिससे लगता है कि यह वायरस अब कमजोर पड़ने लगा है। ये आंकड़े निस्संदेह सुकूनदेह हैं, मगर इनसे यह भ्रम नहीं पाल लेना चाहिए कि कोरोना महामारी बहुत जल्द अतीत बन सकती है। विशेषकर सांस संबंधी संक्रमण के बारे में यही कहा जाता है कि नए मामलों के सामने न आने के बावजूद कुछ वक्त तक बीमारी बनी रहती है। लिहाजा, हमें हरसंभव सावधानी बरतनी ही होगी। घर से बाहर निकलते वक्त मास्क पहनना, दो गज की शारीरिक दूरी का पालन करना व नियमित तौर पर साबुन से हाथ धोना या सैनिटाइजर का इस्तेमाल आवश्यक है। इसके साथ ही, 'ट्रेसिंग' (संक्रमित के संपर्क में आए तमाम लोगों की पहचान) पर भी हमें लगातार ध्यान देना होगा। कुछ देशों में यह भी दिखा है कि वायरस के 'म्यूटेंट' (रूप में बदलाव) हो जाने से संक्रमण में अचानक तेज वृद्धि हुई है। अपने यहां भी यह खतरा बना हुआ है। चूंकि हरेक वायरस का यह नैसर्गिक गुण होता है कि वह अनुकूल माहौल मिलने पर म्यूटेंट हो सकता है, इसलिए भारत में कोरोना

वायरस का नया 'स्ट्रेन' दूसरे देशों से ही नहीं आ सकता, बल्कि यहां पर पैदा भी हो सकता है। यही कारण है कि वायरस की 'जेनेटिक' जांच, यानी उत्पत्ति संबंधी पड़ताल आवश्यक है, जिससे पता चलता है कि वायरस अगर अपना चरित्र बदल रहा है, तो वह कितना खतरनाक है। अच्छी बात है कि इस जांच में भारत को महारत हासिल है।

कोविड-19 के खिलाफ हमारी सफलता अब भी दूर है। जरूरत को देखते हुए आर्थिक गतिविधियां भले ही बढ़ाई जा चुकी हैं और बाजार में भीड़ भी दिखने लगी है, मगर एक सच यह भी है कि बिहार विधानसभा चुनाव अभियान का कोई खास नकारात्मक असर नहीं दिखा था, जबकि मतदान उस समय हुए थे, जब देश संक्रमण के शीर्ष पर था। सामान्य तौर पर यही दिखा है कि एशियाई देशों, खासकर दक्षिण एशियाई मुल्कों में न सिर्फ कोविड-19 संक्रमण का प्रसार तुलनात्मक रूप से धीमा रहा, बल्कि मौत भी कम हुई है। इसकी एक वजह यह बताई जा रही है कि एशियाई नागरिकों के शरीर में एक खास प्रोटीन पाया जाता है, जो कोरोना के कुछ रूप के खिलाफ खासा प्रतिरोधक साबित हुआ है। अगर यह निष्कर्ष वैज्ञानिकता की कसौटी पर खरा उतरा, तो इसमें हम अपने लिए उम्मीद देख सकते हैं। हालांकि, मानव शरीर में कोरोना वायरस के खिलाफ प्रतिरोधक क्षमता का आकलन करने वाले सीरो सर्वे की रिपोर्ट बताती है कि देश की एक बड़ी शहरी आबादी इस रोग से सफलतापूर्वक लड़ चुकी है। इसीलिए आगे की हमारी रणनीति इन दो सवालों के आसपास बनेगी कि क्या कोई नया 'स्ट्रेन' हमारे देश में दस्तक दे चुका है? अगर हां, तो यह कितना घातक है या संक्रमण की इसकी क्षमता क्या है? और दूसरा सवाल, अभी हमने जो प्रतिरोधक क्षमता हासिल कर ली है, उस पर वायरस का नया रूप कितना असरदार होगा? बात यदि शहरों की हो, तो यह नहीं मानना चाहिए कि ग्रामीण भारत को नजरअंदाज किया गया है। सीरो सर्वे से यह आशंका जताई जा सकती है कि ग्रामीण इलाकों में खतरा बना हुआ है, लेकिन यदि शहरों में ही संक्रमण को थाम लिया जाएगा, तो गांवों के लिए यह डर गलत साबित होगा। मगर हमारी यह उम्मीद भी तभी तक जिंदा रहेगी, जब तक कि इस वायरस से बचाव के लिए सरकार द्वारा तय तमाम दिशा-निर्देशों का हम संजीदगी से पालन करते हैं। इसीलिए अब देशव्यापी लॉकडाउन के आसार कम नजर आते हैं। हां, किसी आपात स्थिति में इसकी जरूरत पड़ सकती है। फिर भी, आने वाले दिनों में अब छोटे-छोटे क्षेत्रों को कंटेनमेंट जोन घोषित करके ही महामारी का मुकाबला किया जाएगा। इन दिनों कई जगहों से ऐसी तस्वीरें भी आ रही हैं कि स्थानीय प्रशासन खुद सरकारी दिशा-निर्देशों का पालन कराने को उत्सुक नहीं है, जबकि शुरुआती दिनों में इसके लिए पुलिस ने लाठियां तक पटकी थीं। इससे राजनीतिक जलसे या धार्मिक उत्सव जैसे बड़े आयोजन खतरे को न्योता दे सकते हैं। स्थानीय प्रशासन को पेशेवर रुख अपनाना पड़ेगा। उसे यह सुनिश्चित करना चाहिए कि जरूरी सावधानियों का हरसंभव पालन किया जाए। अभी कुंभ स्नान के

लिए भी मेला पास जारी करने की तैयारी चल रही है, जो एक अच्छी रणनीति है। इसी तरह, सार्स या मर्स की तरह कोविड-19 बीमारी के अचानक खत्म होने के दावे को भी सही नहीं माना जा सकता। अलग-अलग राष्ट्रों में इस वायरस का अलग-अलग पैटर्न दिखा है। यहां तक कि हमारे देश के अंदर ही अलग-अलग हिस्सों में इसके कई रूप मिले हैं। अपने यहां तो केरल में आज भी यह तेजी से लोगों को बीमार कर रहा है। लिहाजा, कोरोना वायरस का यह चरित्र आगे भी बना रहेगा। हां, एक बड़ी आबादी के इसके खिलाफ प्रतिरोधक क्षमता हासिल कर लेने से हम कहीं बेहतर स्थिति में हैं। ऐसे हालात में टीके से स्वाभाविक तौर पर उम्मीद बन जाती है। अभी जो निर्धारित किया गया है, उसके मुताबिक अग्रिम मोर्चे के तमाम कर्मियों के अलावा 60 साल से अधिक उम्र के बुजुर्गों को टीका लगाया जाएगा। हम सबसे तेज गति से टीकाकरण करने वाले देश हैं और पिछले 24 दिनों में ही करीब 58 लाख लोगों को टीका लगाया जा चुका है। फिर भी, प्राथमिकता सूची वाले वर्ग का टीकाकरण जून-जुलाई तक संभव है। इसके बाद विशेषज्ञ समूह तय करेगा कि किनको टीका लगाया जाएगा, किन्हें इसकी जरूरत नहीं है। अगर बिना टीका लगाए हालात संभलते हैं, तब भी विशेषज्ञ समूह के निर्णय पर ही हमें भरोसा करना चाहिए और उसी के मुताबिक टीका लगवाने का फैसला करना चाहिए।

# कोरोना से स्वस्थ होकर दूसरी बीमारी से घिर रहे

## चिंताजनक

नई दिल्ली | हेमवती नंदन राजौरा

कोविड के मामलों में कमी आने से जहां एक तरफ राहत मिली है, वहीं दूसरी तरफ ठीक हुए मरीजों में बगैर लक्षण ही दिल समेत अन्य अंगों की बीमारियों के होने से चिंता बढ़ गई है। दिल्ली के अलग-अलग अस्पतालों में संचालित पोस्ट कोविड क्लीनिक में कई ऐसे मरीज पहुंच रहे हैं, जो कोरोना ठीक होने के दो से तीन सप्ताह बाद ही अन्य बीमारियों के शिकार हो गए हैं।

एम्स के कार्डियोलॉजी विभाग के प्रोफेसर डॉक्टर संदीप मिश्रा के मुताबिक, कोरोना के अधिकतर मरीज दो से छह सप्ताह के बीच में ठीक हो जाते हैं लेकिन एक तिहाई गंभीर मरीज ऐसे हैं, जिनमें छह सप्ताह बाद भी लक्षण दिख रहे हैं। कोरोना से ठीक हुए कुछ ऐसे मरीज भी उनके पास आए हैं, जिन्हें ठीक होने के बाद दिल की बीमारी

## संक्रमण से स्वस्थ होने के दो सप्ताह बाद हृदयाघात

एम्स के हृदय रोग विशेषज्ञ प्रोफेसर संदीप मिश्रा ने बताया कि सेल्समैन का काम करने वाले 50 वर्षीय सुनील को हल्के लक्षणों के बाद कोरोना हुआ था। उनकी सूंघने की क्षमता खत्म हो गई थी, लेकिन ऑक्सीजन सेचुरेशन का स्तर बेहतर था। इस वजह से वे पांच दिन होम आइसोलेशन में रहे। 15 दिन बाद उनकी रिपोर्ट निगेटिव आई। एक दिन ऑफिस में उन्हें पसीना आने लगा। अस्पताल लाने पर पता चला कि दिल का दौरा पड़ा था।

मायोकार्डिटिस की वजह से परेशानी हो रही है। संदीप ने बताया कि कुछ मरीजों में संक्रमण के बाद मायोकार्डिटिस के मामले देखे गए हैं। मायोकार्डिटिस हृदय व इसके इलेक्ट्रिकल सिस्टम को प्रभावित कर सकता है। इससे खून पंप करने की क्षमता कम हो जाती है और धड़कनें अनियमित हो जाती हैं।

## इन दो बातों का जरूर ध्यान रखें

1. प्रोफेसर संदीप मिश्रा के मुताबिक, कोरोना से ठीक होने के बाद लोगों को एक हफ्ते तक आराम करना चाहिए। ठीक होने के तुरंत बाद ज्यादा कसरत और व्यायाम से बचना चाहिए।

2. दो जांच जरूर करानी चाहिए। पहला डी डायमर टेस्ट, जो बताता है कि खून का थक्का तो नहीं जमने वाला है। दूसरी इलेक्ट्रोकार्डियोग्राम जांच करानी चाहिए।

## **Seroprevalence figure for Tamil Nadu stands at 31.6% (The Hindu: 20210210)**

<https://www.thehindu.com/news/national/tamil-nadu/coronavirus-seroprevalence-figure-for-tamil-nadu-stands-at-316/article33796614.ece>

Variations seen across categories; Chennai records 40.9%

The latest State-level seroprevalence data for Tamil Nadu indicates that 31.6% of its population has contracted COVID-19 at some point in time. Chennai's figure is higher, at 40.9%.

The results of the survey were recorded in the pre-print journal medRxiv on February 8. Blood samples were drawn from a total of 26,640 adults from across the 37 districts of the State in October-November 2020 for antibody tests.

As per the seroprevalence data released in October last year by the National Institute of Epidemiology, a unit of the Indian Council of Medical Research, the seroprevalence for Chennai alone was 32.8%. The figure as per the results of the first seroprevalence survey in Chennai, which were released in July 2020, was about 20%. With the total population of the State being 72 million, the present study has indicated that at least 22.7 million people had been infected by November 30, 2020 — the last day of serological sampling. Thus, the actual number of infections is roughly 36 times higher than the number of confirmed cases, which stood at 6,70,392 as of October 15. The State has recorded a total of 8.42 lakh cases and just over 12,000 deaths.

The overall seroprevalence of 31.6% masks substantial variations across the State, as evidenced in the fact sheet. For instance, in Perambalur district, the seroprevalence was 51%, while it was just 11% in the Nilgiris. As is the trend globally, the seroprevalence in urban areas (36.9%) was higher than in rural areas (26.9%). Further, the working age group — between 40 and 49 years for the purposes of the study — had significantly higher seroprevalence than the youth (18-29 years, 30.7%) and the elderly (70+ years, 25.8%). The estimated seroprevalence implies an infection fatality rate of 0.052%, nominally lower than the figures for Karnataka and Mumbai.

“If the percentage of the population actually infected seems lower than we anticipated, we must remember that it might have been the case at the time of conducting the survey. The rate would only continue to go up,” Health Secretary J. Radhakrishnan explained. He added that the State was planning to conduct seroprevalence studies regularly, and the next one would be launched possibly by the end of February.

“This knowledge of population-level immunity is the basis of epidemiology. This is critical for understanding the epidemiology of the SARS-CoV-2 (COVID-19) and formulating

effective infection control measures, including the allocation of vaccines,” said T.S. Selvavinayagam, Director of Public Health and co-author of the journal report.

The study was approved by the Directorate of Public Health and Preventive Medicine and the Institutional Ethics Committee of the Madras Medical College.

## रैबीज

**अब प्रयोगशाला में मानव शरीर में रैबीज की एंटी बॉडी होगी विकसित, अमृतसर में बनेगी लैब (Dainik Jagran: 20210210)**

<https://www.jagran.com/punjab/jalandhar-city-now-rabies-anti-body-will-be-developed-in-amritsar-lab-in-human-body-jagran-special-21350871.html>

पंजाब के अमृतसर के सरकारी मेडिकल कालेज में रैबीज डायनामिक प्रयोगशाला बनाई जाएगी। इस लैब में मानव शरीर में रैबीज की एंटी बॉडी विकसित की जाएगी। सरकार द्वारा इसके लिए 24.50 लाख रुपये जारी किए जा चुके हैं।

अमृतसर [नितिन धीमान]। रैबीज रोग से पंजाब सहित उत्तर भारत में प्रतिवर्ष हजारों जानें चली जाती हैं। दुर्भाग्यपूर्ण बात यह है कि सरकार ने लावारिस कुत्तों पर नियंत्रण का कोई सकारात्मक प्रयास नहीं किया है। इससे कुत्तों की संख्या बढ़ रही है और प्रतिदिन हजारों लोग इनका शिकार बन रहे हैं। रैबीज से होने वाली मौतों का आंकड़ा भी अब तक नहीं है।

अब केंद्र सरकार ने पंजाब के प्रमुख चिकित्सा संस्थान सरकारी मेडिकल कालेज गुरुनानक देव अस्पताल में न्यूरोट्रोपिक लाइसिसिवर्स यानी रैबीज वायरस पर रिसर्च, उपचार एवं एंटी बॉडी निर्माण के प्रोजेक्ट को हरी झंडी दी है। यहां रैबीज से लड़ने के लिए मानव शरीर में एंटी बॉडी यानी रोग प्रतिरोधी क्षमता विकसित की जाएगी।

केंद्र सरकार ने मेडिकल कालेज में रैबीज डायनामिक प्रयोगशाला स्थापित करने के लिए 24.50 लाख रुपये जारी कर दिए हैं। यह उत्तर भारत की पहली प्रयोगशाला होगी, जहां मानवीय शरीर पर रैबीज की

जांच एवं उपचार किया जाएगा। लुधियाना स्थित गुरु अंगद देव वेटरनरी यूनिवर्सिटी में प्रयोगशाला है, पर वहां पशुओं में रैबीज की जांच की जाती है।

अमृतसर में मानवीय शरीर पर रैबीज की भयावता का आकलन किया जाएगा। यह प्रयोगशाला मेडिकल कालेज में स्थापित वायरल रिसर्च एंड डायग्नोस्टिक लैब में बनाई जाएगी। वायरल लैब में कोरोना व स्वाइन फ्लू वायरस की जांच की जाती है। रैबीज डायनामिक प्रयोगशाला में बायो सेफ्टी कैबिनेट, एलाइजा रीडर, वाशर, डीप फ्रीजर व फ्लोरेट माइक्रोस्कोप सहित कई अत्याधुनिक चिकित्सा उपकरण लगाए जाएंगे। केंद्र सरकार ने देशभर में चार प्रयोगशालाएं बनाने की स्वीकृति दी है। इनमें अमृतसर के अतिरिक्त एक कर्नाटक व दो अन्य दक्षिण भारत के लिए हैं।

ऐसे विकसित की जाएगी रैबीज प्रतिरोधी क्षमता

रैबीज एक ऐसा रोग है जो इंसान को ताउम्र के लिए दिव्यांग बना सकता है या मौत के द्वार तक पहुंचा देता है। अब तक उत्तर भारत में रैबीज को डायग्नोस करने के लिए कोई प्रयोगशाला अथवा जरिया नहीं था। रैबीज के शिकार इंसान की मौत को स्वाभाविक ही माना जाता रहा है। यही वजह है कि इस रोग का कोई डाटा नहीं है।

रैबीज डायनामिक प्रयोगशाला में इस रोग को डायग्नोस किया जाएगा। कुत्ते का शिकार बना मरीज जब सरकारी अस्पताल में एंटी रैबीज इंजेक्शन लगवाने जाएगा तो संबंधित डाक्टर इसकी जानकारी डायनामिक प्रयोगशाला के इंचार्ज को देगा। मरीज को प्रयोगशाला में भेजा जाएगा। यहां मरीज की जांच की जाएगी कि कुत्ते के काटने से वह रैबीज का शिकार तो नहीं हो गया। यदि ऐसा है तो मरीज के शरीर में रैबीज से लड़ने की रोग प्रतिरोधी क्षमता बढ़ाने के लिए इंजेक्शन लगाए जाएंगे।

दस से पंद्रह दिन बाद यह जांच की जाएगी कि मरीज के शरीर में प्रतिरोधी क्षमता विकसित हुई अथवा नहीं। यदि नहीं तो इस पर भी विस्तृत शोध के बाद पुनः इंजेक्शन लगाया जाएगा। प्रयोगशाला में रैबीज के विभिन्न प्रकारों पर शोध कर समाधान ढूंढा जाएगा। मेडिकल कालेज में प्रयोगशाला के निर्माण के लिए इमारत है। बस उपकरणों की खरीद की जानी है। यहां रैबीज पाजिटिव मरीजों एवं इस वायरस से होने वाली मौतों का डाटा तैयार किया जा सकेगा।

## बर्ड फ्लू

**महाराष्ट्र में बर्ड फ्लू का कहर जारी, एक लाख से ज्यादा पक्षियों को मारने की तैयारी (Amar Ujala: 20210210)**

<https://www.amarujala.com/india-news/bird-flu-news-100-000-more-birds-culled-as-virus-spreads-in-maharashtra-avian-influenza>

देश में बर्ड फ्लू का कहर जारी है। मध्यप्रदेश की राजधानी भोपाल स्थित केंद्रीय प्रयोगशाला आईसीएआर-नेशनल इंस्टीट्यूट ऑफ हाई-सिक्योरिटी एनिमल डिजीज (एनआईएचएसएडी) ने मंगलवार को महाराष्ट्र के नंदुरबार जिले के नवापुर में 12 और पोल्ट्री फार्मों में बर्ड फ्लू से पक्षियों के मरने की पुष्टि की है। इसी के साथ प्रभावित पोल्ट्री फार्मों की संख्या बढ़कर 16 हो गई। इसके बाद प्रशासन ने नवापुर में मंगलवार को राज्य ने एक लाख से अधिक मुर्गियों को मारने के लिए अलग कर लिया।

राज्य में मंगलवार को 1,291 पक्षियों की मौत बर्ड फ्लू से हुई, जिसमें 1266 पोल्ट्री पक्षी हैं। इसी के साथ बर्ड फ्लू से मरने वाले पक्षियों की संख्या बढ़कर 41,504 पहुंच गई है। बता दें कि नवापुर तहसील के 28 पोल्ट्री फार्म में कुल 9.50 लाख मुर्गियां हैं। बर्ड फ्लू से पोल्ट्री फार्म को भारी नुकसान होगा। प्रशासन ने नवापुर में अंडे और मुर्गियों की बिक्री पर प्रतिबंध लगा दिया है। नवापुर में पोल्ट्री फार्म सबसे अधिक हैं। पशुपालन विभाग की 100 टीमों नंदुरबार पहुंच गई हैं। इससे पहले 2006 में भी नवापुर में बर्ड फ्लू फैला था। वर्ष 2006 की तुलना में इस साल नवापुर में बर्ड फ्लू का असर बहुत कम है।

पक्षियों को घर में न रखने का आदेश जारी

प्रशासन ने नवापुर में ग्रामीणों को देशी मुर्गी, चिकन, बतख, कबूतर समेत अन्य पक्षियों को घर में इकट्ठा करके न रखने का आदेश दिया है। लोगों को सभी पक्षियों को प्रशासन के हवाले करना होगा। गांव में पालतू पक्षियों को ले जाने के लिए सरकारी ट्रैक्टर और पिकअप आएगा। आदेश का उल्लंघन करने वालों पर डिजास्टर मैनेजमेंट एक्ट 2005 के तहत कार्रवाई की जाएगी।

व्यापारियों ने भरपाई की मांग की

नासिक के पशुपालन कमिश्नर ने नवापुर तहसील में दौरा करके पोल्ट्री फार्म का निरीक्षण किया। व्यापारियों और अधिकारियों को बर्ड फ्लू के बारे में जागरूक किया। वहीं व्यापारियों ने नुकसान की भरपाई करने की मांग की है।

राज्य पशुपालन विभाग के अधिकारियों ने कहा कि एनआईएचएसएडी ने पुष्टि की कि नवापुर में मुर्गियों की मौत H5N8 स्ट्रेन से हुई है। अधिकारियों ने बताया कि इससे पहले केंद्रीय प्रयोगशाला ने 12 पोल्ट्री में पक्षियों की मौत बर्ड फ्लू से होने की पुष्टि की थी। एक वरिष्ठ अधिकारी ने नाम न छापने का अनुरोध करते हुए बताया कि चार पोल्ट्री फार्मों के नमूनों की रिपोर्ट सोमवार और आठ की मंगलवार को मिली, जिनमें बर्ड फ्लू की पुष्टि हुई है।

## **Experimental drug**

### **Experimental drug can speed up COVID-19 recovery: study (The Hindu: 20210210)**

<https://www.thehindu.com/sci-tech/science/experimental-drug-can-speed-up-covid-19-recovery-study/article33790563.ece?homepage=true>

Doctors prepare to intubate a coronavirus disease (COVID-19) patient in the COVID-19 ICU at Providence Mission Hospital in Mission Viejo, California, U.S.

Patients who received a single injection of the drug peginterferon-lambda were over four times more likely to have cleared the infection within seven days compared to a group treated with placebo

Scientists have found that an experimental antiviral drug can significantly speed up recovery in COVID-19 patients who do not need hospitalisation, an advance that may lead to better interventions to treat those infected with the novel coronavirus.

The study, published in the journal Lancet Respiratory Medicine, noted that patients who received a single injection of the drug peginterferon-lambda were over four times more likely to have cleared the infection within seven days compared to a group treated with placebo.

"This treatment has large therapeutic potential, especially at this moment as we see aggressive variants of the virus spreading around the globe which are less sensitive to both

vaccines and treatment with antibodies," said study co-author Jordan Feld from the Toronto Centre for Liver Disease in Canada.

According to the researchers, people who were treated with the drug cleared the virus quickly with the effect being most pronounced in those with the highest viral levels. "We also saw a trend towards quicker improvement of respiratory symptoms in the treatment group," Feld explained.

Patients with higher viral levels were much more likely to clear the infection following treatment with the drug than those who received the placebo — 79% in the treatment arm compared to 38% in the placebo group.

The researchers added that the virus levels decreased quickly in everyone in the treatment group.

They explained that rapid clearance of the virus has several benefits, particularly in those with high viral levels, as such cases are associated with more severe disease and a higher risk of transmission to others.

Among the 60 patients followed in the study, the researchers said five went to emergency rooms with deteriorating respiratory symptoms. And of those five, they said four were in the placebo group, while only one was in the group which received the actual drug.

"If we can decrease the virus level quickly, people are less likely to spread the infection to others and we may even be able to shorten the time required for self-isolation," Feld said.

The scientists said interferon-lambda is a protein produced by the body in response to viral infections with the ability to activate a number of cellular pathways to kill invading viruses.

Since the novel coronavirus prevents the body from producing interferons as means to avoid being controlled by the body's immune system, the study said treatment with the drug activates those same virus-killing pathways in the cells.

According to the researchers, the drug peginterferon-lambda is a long-acting version of the drug developed by Eiger BioPharmaceuticals, adding that it can be given as a single injection under the skin with a tiny needle. They hope to conduct a phase 3 trial in the near future to find the efficacy of the drug in a much larger population.

## **Air pollution**

### **Over 30% deaths in '18 caused by fossil fuels: Study (Hindustan Times: 20210210)**

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

Globally, one in five deaths in 2018 was due to air pollution caused by burning of fossil fuels, according to the study.

New Delhi : Over 30% of deaths in India in 2018 were caused by air pollution from the burning of fossil fuels, a new study conducted by scientists from Harvard University, University of Birmingham, the University of Leicester and University College London have found. Researchers estimated that exposure to particulate matter from fossil fuel emissions accounted for 18% of total global deaths in 2018, which was around one out of five.

The study, which has been published in Environmental Research, a peer-reviewed journal, states that more than 8 million people are killed each year by air pollution from burning fossil fuels like coal and diesel. However, topping the global charts in the most number of such deaths was India and China.

China had the highest premature mortality with 3.91 million deaths and India accounted for 2.46 million deaths.

Data collected by the researchers showed that in India, Uttar Pradesh reported the maximum deaths caused by exposure to fossil fuel fumes — or 471,456 additional deaths. This was followed by Bihar with 288,821 deaths caused by fossil fuel burning and West Bengal, where 276,312 such deaths took place. The study also said that Haryana, Madhya Pradesh, Maharashtra and Tamil Nadu also reported over 100,000 (each) such deaths.

Scientists said that while previous researches on similar areas relied on satellite and surface observations to estimate the average global annual concentrations of airborne particulate matter, known as PM2.5 (ultrafine particulate matter with diameter less than 2.5 micrometres), the satellite and surface observations were unable to tell the difference between particles from fossil fuel emissions and those from dust, wildfire smoke or other sources.

In this study, however, the scientists have used a more advanced technology of GEOS-Chem, a global 3D model of atmospheric chemistry, which has a high spatial resolution.

This means that the researchers could divide the globe into a grid with boxes as small as 50 km x 60 km and look at pollution levels in each box individually. “Rather than rely on averages spread across large regions, we wanted to map where the pollution is and where people live, so we could know more (about) exactly what people are breathing,” said Karn Vohra, a graduate student at the University of Birmingham and first author of the study.

Environment and health experts stressed on the need for governments to control the use of fossil fuels and check on the emissions caused by it, to prevent such premature deaths.

“When we see that deaths from fossil fuel combustion exceed deaths from malaria by a factor of 20, we must recognise that this is a major global health crisis,” said Sarah Hsu, executive vice chair, Warren Alpert Medical School of Brown University. “...As healthcare workers, we have the obligation and opportunity to save millions of lives by advocating for clean energy, divesting from fossil fuels, and de-carbonizing our healthcare facilities,” Hsu said.

## **Food and Nutrition**

### **FSSAI notifies regulations to limit trans fat in food items (The Tribune: 20210210)**

<https://www.tribuneindia.com/news/health/fssai-notifies-regulations-to-limit-trans-fat-in-food-items-210085>

India joins the club of around 40 countries globally that have already enacted the best practice policies to eliminate trans fats

Food regulator FSSAI on Tuesday said regulations to limit the content of trans fat in all food items have been notified.

“With gazette of recent regulation to limit the content of trans fats in all food items, the Food Safety and Standards Authority of India (FSSAI) joins the league of several other nations globally having best practice policies for trans fat elimination,” the regulator said in a statement.

India joins the club of around 40 countries globally that have already enacted the best practice policies to eliminate trans fats and would be among the first countries in Asia after Thailand in achieving the best-practice policies in trans fat elimination, it said.

Under the regulation notified on December 29 last year, FSSAI said it has limited industrial TFA (trans fatty acids) to not more than 3 per cent in all fats and oils by January 2021 and not more than 2 per cent by January 2022.

The Food Safety and Standards (Prohibition and Restrictions on Sales) Second Amendment Regulations, 2021, has been notified earlier this month.

This regulation states that all food products in which edible oils and fats are used as an ingredient should not contain industrial trans fatty acids more than 2 per cent by mass of the total oils/fats present in the product, on and from January 1, 2022.

It also defines industrial trans fatty acids as: “All the geometrical isomers of mono-unsaturated and polyunsaturated fatty acids having non-conjugated, interrupted by at least one methylene group, carbon-carbon double bonds in the trans configuration. It excludes trans-fatty acids from dairy, meat, fish and their products.”

Industrial trans fats are produced by adding hydrogen to liquid vegetable oils to make them solid, which increases their stability at room temperature and extends shelf life. Trans fats are largely present in partially hydrogenated vegetable fats/oils, vanaspati, margarine and bakery shortenings. They are found in baked and fried foods.

“Research has shown that higher intakes of industrially produced trans fatty acids (more than 1 per cent of total energy intake) are associated with increased risk of high cholesterol and heart diseases,” FSSAI said.

According to 2017 estimates, every year more than 1.5 million deaths in India is attributed to coronary heart disease, of which nearly 5 per cent (71,000) are due to trans fats intake.

Elimination of industrial TFA has been recognized as one the modifiable risk factors to prevent heart diseases.

“This is especially important in the present scenario, when COVID -19 is adding risk to people suffering from comorbidities like hypertension, heart diseases, diabetes etc,” it added.

In 2018, the WHO called for elimination of industrially-produced trans fat from the food supply by 2023 and released an action package ‘REPLACE’ for the same. — PTI

## **Mental Health**

**Study highlights link between mental disorders and gene readouts (The Tribune: 20210210)**

<https://www.tribuneindia.com/news/health/study-highlights-link-between-mental-disorders-and-gene-readouts-210029>

Research by the National Institute of Mental Health (NIMH) claims that the distinctions in the expression of gene transcripts that construct human body cells may hold the way to

understand how mental issues with shared hereditary danger factors bring about various examples of onset, symptoms, side effects, course of ailment, and treatment reactions.

Findings from the study, conducted by researchers at the National Institute of Mental Health (NIMH), part of the National Institutes of Health, appear in the journal *Neuropsychopharmacology*.

“Major mental disorders, such as schizophrenia, bipolar disorder, and major depressive disorder, share common genetic roots, but each disorder presents differently in each individual,” said Francis J. McMahon, M.D., a senior author of the study and chief of the Human Genetics Branch, part of the Intramural Research Program NIMH.

“We wanted to investigate why disorders present differently, despite this seeming genetic similarity.”

McMahon and colleagues suspected that the brain’s transcriptome may hold some clues. The human genome is made up of DNA that contains instructions for helping maintain and build our cells.

These instructions must be read and then copied into so-called “transcripts” for them to be carried out. Importantly, many different transcripts can be copied from a single gene, yielding a variety of proteins and other outputs. The transcriptome is the full set of transcripts found within the body.

The researchers used post-mortem tissue samples to examine the brain transcriptomes of 200 people who had been diagnosed with either schizophrenia, bipolar disorder, major depressive disorder, or who did not have a known mental illness.

The researchers examined both genes and transcripts expressed in the subgenual anterior cingulate cortex, a brain site involved in mood disorders, reward, impulse control, and emotion regulation.

The brain tissue samples came from the NIMH Human Brain Collection Core, curated by NIMH’s Barbara Lipska, Ph.D., co-senior author of the paper.

To increase the odds of detecting rare transcripts, the researchers sequenced the transcripts at a resolution about four times greater than that used in previous studies.

This technique identified 1.5 times more transcripts than earlier studies using the same method at lower resolution, confirming that this sequencing method picks up many transcripts that otherwise would have been missed.

The researchers found only modest differences in gene expression between individuals with a mental disorder and individuals without a mental disorder. However, when they focused on the transcripts, they found two to three times as many differences between individuals in the two groups.

The most noticeable differences emerged when the researchers compared transcripts between two groups of individuals with a mental disorder—e.g., bipolar disorder versus schizophrenia, depression versus schizophrenia, or depression versus bipolar disorder.

“When we compared disorders in our transcript-level analyses, that is when we saw the stark differences,” said Dr. McMahon.

“Most transcripts that were expressed differently—produced in higher versus lower levels—turned out to be expressed in opposite directions in people with different disorders. Some transcripts were expressed in the same direction in individuals with mood disorders and the opposite direction in individuals with schizophrenia.”

For example, distinct transcripts in the gene, SMARCA2, a known risk gene for autism spectrum disorder that regulates the expression of many other genes important in neuronal development, were expressed differently in brain samples from people with schizophrenia than in samples from people with bipolar disorder.

Parts of a gene’s instructions may be kept in or left out during the transcription process.

The researchers found that a common genetic variant that regulates this inclusion and exclusion, called splicing quantitative trait loci (sQTLs), may play a notable role in the inherited risk for each disorder.

“We found that subtle differences in gene expression across different disorders reflect more pronounced and diagnosis-specific changes at the level of transcripts,” said McMahon.

“A cell can express many different transcripts from the same gene, resulting in different proteins—and potentially different illness processes.”

More research is needed to better understand the functions of different transcripts, the timing of alternative splicing, and the transcriptomic differences in specific brain regions and cell types.

However, the current study sheds light on the importance of understanding transcript-level differences to get a full picture of why mental disorders vary in onset, progression, and symptoms. — ANI

## **The connection between post-traumatic stress disorder and nutrition (Medical News Today: 20210210)**

<https://www.medicalnewstoday.com/articles/the-connection-between-post-traumatic-stress-disorder-and-nutrition#Going-forward>

People who eat two or more sources of fiber daily are less likely to have post-traumatic stress disorder (PTSD) than those who eat less fiber.

There is a correlation between eating chocolate and a higher incidence of PTSD.

PTSD is more common among people living in poverty and among women.

People who are migrants and not white are 50% more likely to have PTSD than white Canadians.

A new analysis of data from the Canadian Longitudinal Study on Aging (CLSA) finds statistical associations between various health factors and PTSD.

According to the authors of the new study, which appears in *Social Psychiatry and Psychiatric Epidemiology*, the research does not establish that these factors actually cause PTSD, and the reverse may be true. However, their identification may nonetheless inform further research.

In some cases, the authors posit that underlying physiological mechanisms may be at play.

### Nutritional health and PTSD

The CLSA is a large, long-term study of the Canadian population that has been ongoing for more than 20 years. The researchers behind the new study examined the data for 27,211 individuals aged 45–85 years. Of these people, 1,323 had PTSD.

The study found that people who eat two or three sources of fiber per day are less likely to experience episodes of PTSD than those eating less fiber.

Lead author Karen Davison, director of the Nutrition Informatics Research Group and health science program faculty member at Kwantlen Polytechnic University in Surrey, British Columbia, suggests a reason for this finding: “It is possible that optimal levels of dietary fiber have some type of mental health-related protective effect.”

Davison says that this may have to do with short chain fatty acids (SCFAs), which originate in the gut. “SCFA molecules can communicate with cells and may affect brain function,” she explains.

The researchers also linked the consumption of other foods to a higher incidence of PTSD. These foods included chocolate, pastries, nuts, and pulses.

Co-author Christina Hyland, a doctoral student at the University of Toronto (U of T), calls the finding unexpected.

She cautions, however, that the inclusion of nuts on the list may reflect the inclusion of peanut butter, but not more healthful nut options, among the food choices in the CLSA.

### Poverty and PTSD

When they looked at nondietary factors, the researchers found a strong association between poverty and PTSD. Of the individuals with an annual household income below \$20,000 Canadian, 1 in 7 experienced the disorder.

Senior author Prof. Esme Fuller-Thomson, director of the Institute for Life Course & Aging and professor at the U of T, says that this is one of those links in which the cause and effect are unclear.

“Unfortunately, we do not know whether PTSD symptoms undermined an individual’s ability to work, which resulted in poverty, or whether the stress associated with poverty exacerbated PTSD symptoms in respondents,” Prof. Fuller-Thomson notes.

### PTSD, women, and age

The results showed that 6.9% of women and 3.9% of men had PTSD, meaning that it affected women nearly twice as often as men.

Among the women, 8.8% of those who were divorced or widowed had PTSD compared with 4.4% of currently married women or women with a common-law partner.

The study’s analysis supports previous research showing that men and women are more likely to experience PTSD at certain times in their life.

Men are most likely to have PTSD in their early 40s, while women most often experience it in their early 50s.

### Chronic health conditions and PTSD

The analysis revealed links between PTSD and both chronic pain and smoking. Meghan West, a master of social work student at the U of T, notes, “This is consistent with results from other studies, which found increased risks of cardiovascular, metabolic, and musculoskeletal conditions among individuals with PTSD.”

“These links may be due to alterations in the hypothalamic-pituitary-adrenal axis (HPA axis), sympathetic nervous system inflammation, or health behaviors that increase the risk of poor physical health,” she adds.

### PTSD and migrant status

The study also found that migrants who were not white were twice as likely to experience PTSD as white migrants (7.5% compared with 3.6%). They were also 50% more likely than Canadian-born white individuals (5.6%) to have PTSD.

Co-author Dr. Hongmei Tong, assistant professor of social work at MacEwan University in Edmonton, Ontario, suggests that the cause may be the challenges that migrants face before arriving in their adopted country, especially when they are coming from nations in which armed conflict is common.

“Immigrants from these regions are also more likely to have experienced traumatic incidents, such as natural disasters and armed conflict, and could be at greater risk of PTSD as a result. As such, there may be a greater need for mental health resources for visible minority immigrants,” she says.

Going forward

The many associations that the study revealed between PTSD and various factors suggest that anyone hoping to provide support for people who experience the disorder should consider the wide range of possible factors contributing to its occurrence.

The authors conclude:

“Interventions aimed at managing PTSD in mid-age and older adults should consider ethnicity, immigrant status, as well as socioeconomic, health, and nutrition status.”

## **Infectious disease**

### **Parasite infections may prevent aging and disease (Medical News Today: 20210210)**

<https://www.medicalnewstoday.com/articles/parasite-infections-may-prevent-aging-and-disease#Expanding-future-research>

Research has suggested that the absence of parasite infections may be linked to an increased prevalence of inflammatory conditions.

According to a new review of existing studies, parasites may have anti-inflammatory properties that may help prevent aging.

Controlled restorative therapies can be beneficial for regulating a proper immune response.

Through centuries of evolution, the human body and its surrounding environments have adapted to improve health and promote longevity. For example, the increasing emphasis on hygiene has been effective in combating parasites that cause disease.

These changes have been crucial, as evidenced by the greater life expectancies and lower disease rates in certain regions of the world. However, these benefits come with trade-offs.

Parasites and humans share a long history of coexistence. It is likely that the human immune function developed in relation to parasitic mechanisms.

The “old friends” hypothesis states that these parasites were like old friends of the human body that helped improve tolerance and function and that their decline led to a higher prevalence of allergic responses and autoimmune conditions.

This decline may also promote inflammaging, which is a chronic form of inflammation that worsens with progressing age. Inflammaging contributes to several age-related conditions, such as dementia, cancer, osteoporosis, and heart disease.

One recent study shows that inflammaging may exacerbate symptoms of COVID-19, as well.

Bruce Zhang and Dr. David Gems, from the Institute of Healthy Ageing at University College London in the United Kingdom, conducted a review of the existing literature to explore the use of parasite worms as a therapy to reverse conditions linked to inflammaging. This review article appears in the journal *eLife*.

The authors focused their research on a specific group of parasitic worms called helminths, which include roundworms, tapeworms, and flukes. These parasites live inside host organisms, such as human bodies, and take advantage of their immune responses in order to survive.

These findings also provide a glimpse into the intricacies of the human body’s immune functions.

Pre-aging inflammatory conditions

Scientists associate the decline of helminths with multiple inflammatory conditions that occur earlier in life. These include asthma, eczema, multiple sclerosis (MS), rheumatoid arthritis, inflammatory bowel disease, and type 1 diabetes.

Current evidence supports the idea that both natural and deliberate infection with helminths can combat these inflammatory conditions.

Indeed, in 1976, researcher J. A. Turton published a report in which he explained that his hookworm infection reduced the severity of his allergies.

A more recent study — which Marc Charabati, of the University of Montreal in Canada, led — showed that infecting mice with helminths eased their MS symptoms.

COVID-19 has made the entire world painfully aware of the terrible power that viruses can wield. Learn how climate change impacts the spread of other viruses, such as West Nile virus, in our feature article.

Although these findings suggest that restorative helminth therapy may address pre-aging inflammatory conditions, the question of whether or not it can prevent conditions that occur in older age remains.

A key characteristic of inflammaging is a consistent increase in pro-inflammatory proteins in the blood. Multiple experiments have shown that helminth infection can suppress levels of these pro-inflammatory proteins.

In contrast, administering anthelmintic treatments — which can kill helminths — increased the inflammatory response of these proteins.

Although the direct administration of helminths can be beneficial, it can also cause undesired infections. A viable alternative is to utilize the molecular components of helminth mechanisms.

One experiment, which Jenny Crowe and others at the University of Glasgow in the U.K. conducted, incorporated this concept in a mouse model that ate a high calorie diet. Specifically, the team administered a protein called ES-62, which is an anti-inflammatory molecule derived from roundworm secretion.

They found that ES-62 prevented both the degradation of the gut barrier and the enlargement of fat tissue, which are mechanisms that contribute to inflammaging.

The mice also showed a 12% increase in their median lifespan. This suggests that ES-62 was able to suppress inflammaging and limit health-related age acceleration.

Similar studies have indicated the effectiveness of helminths and helminth-secreted products in protecting against rheumatoid arthritis, atherosclerosis, and type 2 diabetes.

There is also some evidence that points to helminth therapy in cancer resistance. A few studies in mice have shown that tapeworms prevented the formation of colon tumors.

However, it is important to note that certain helminths can cause cancer, as well. For example, the trematode parasite *Schistosoma haematobium* can cause bladder cancer.

Although these studies do not confirm that helminths can directly reduce inflammaging, they do show the ability of helminths to protect against the processes that ultimately lead to it.

#### Expanding future research

Zhang and Dr. Gems raise important questions regarding helminth therapy research. These include: “What are optimal ages to apply such therapy to reduce inflammaging? Would helminth therapy act only in a preventive fashion (typical of anti-aging treatments), or could it reverse existing disease symptoms?”

They also state the necessity of understanding the pathways that shape anti-inflammaging properties.

As Dr. Gems says, “In the wake of successes during the last century in eliminating the evils of helminth infections, the time now seems propitious to explore further their possible benefits, particularly for our aging population — strange though this may sound.”

## **Parkinson's disease**

### **Could prostate drugs reduce Parkinson's disease risk? (Medical News Today: 20210210)**

<https://www.medicalnewstoday.com/articles/could-prostate-drugs-reduce-parkinsons-disease-risk>

A new study suggests that repurposing glycolysis-enhancing drugs such as terazosin, which is typically used to treat an enlarged prostate, may reduce the risk of Parkinson’s disease in men.

Parkinson’s disease is a neurodegenerative disorder caused by reduced levels of a brain chemical called dopamine. The symptoms worsen over time, and the disease can have a wide range of complications, from causing difficulty speaking to difficulty chewing and swallowing.

While Parkinson’s disease primarily affects movement, dopamine loss can also cause nonmotor symptoms, including depression, dementia, trouble sleeping, and low energy.

Various treatments can address the broad spectrum of symptoms, but currently, no medication can cure Parkinson’s disease.

A majority of treatments focus on restoring dopamine levels. Recently, however, more research has investigated ways to increase energy levels using a metabolic pathway called glycolysis.

The role of glycolysis in Parkinson’s

All cells need energy to carry out their functions, and glycolysis is one of the first metabolic pathways in the production of energy.

This multistep pathway breaks down glucose into different types of molecules used for further energy production.

The findings of a 2014 study suggest that increased oxidative stress from the early development of Parkinson's leads to impaired glucose metabolism.

Meanwhile, the results of a 2019 study indicate that increasing energy production levels can delay the onset of Parkinson's symptoms.

An earlier study concluded that a drug used to treat prostate enlargement, called terazosin, could enhance cellular energy levels by increasing the activity of a key enzyme needed to break down glucose in glycolysis.

For this reason, the researchers from the 2019 study studied terazosin's effects in animal models and used clinical databases to collect information about people with Parkinson's disease who were taking the drug. They found that terazosin delayed the development of the disease, reduced complications, and reduced the number of diagnoses.

Now, an international team led by researchers from the University of Iowa has compared the effectiveness of glycolysis-enhancing drugs, including terazosin, with those of tamsulosin — a drug that has similar indications but does not increase glycolysis.

Their results were recently published in *JAMA Neurology*.

#### Investigations in the US and Denmark

The researchers conducted two investigations, which involved collecting medical information from people who were new to taking terazosin, doxazosin, alfuzosin, or tamsulosin. All are glycolysis-enhancing except tamsulosin.

From January 1996 to December 2017, the team used data from three Danish nationwide health registries. From January 2001 to December 2017, they took information from the Truven Health Analytics MarketScan database.

The researchers excluded patients who had developed Parkinson's disease before or within 1 year of taking the medication. They did not include any female participants because these drugs are typically prescribed to males.

Data collection began after the first year of starting the new medication. It continued until the person was removed from the database or until December 2017.

#### Which drugs reduced Parkinson's risk?

The researchers matched people taking glycolysis-enhancing drugs with people taking tamsulosin who had similar characteristics.

There were 52,365 matched pairs in the Danish cohort and 94,883 in the Truven cohort. The average age of the cohorts were 67.9 years and 63.8 years, respectively.

In both cohorts, people who took glycolysis-enhancing drugs were less likely to develop Parkinson's disease than those who took tamsulosin.

People who took glycolysis-enhancing drugs had a 12% lower risk of developing Parkinson's disease in the Danish cohort and a 37% lower risk in the Truven cohort, compared with people who took tamsulosin.

The researchers observed that for people who took a glycolysis-enhancing drug rather than tamsulosin, not only was there a reduction in the risk of developing Parkinson's disease, but this risk continued to decrease the longer the person took the medication.

While the two investigations were "conceptually similar," the team acknowledges that small design differences could have influenced the results.

"While the designs and outcome definitions used in the analyses were roughly parallel, differences between the two countries' healthcare systems and coding practices make direct comparison between the Truven cohort and the Danish cohort difficult," the authors write.

Some considerations about the drugs

Many risk factors can contribute to the development of Parkinson's disease, and the study did not look at other variables — such as head trauma or pesticide exposure — that could further increase disease progression.

Still, the authors suggest that identifying people with impaired glucose metabolism and prescribing glycolysis-enhancing drugs could help.

It is important to note that the study focused only on males, and it may be premature to suggest that females might benefit from this particular treatment.

A 2019 review in the *Journal of Parkinson's Disease* reports that men are twice as likely to have Parkinson's disease than women. However, in women, the disease is more likely to progress quickly, and women have higher mortality rates.

Because the present study was observational, further research, including randomized clinical trials, is needed to confirm that glycolysis-enhancing drugs can delay Parkinson's disease in everyone.