



## DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Thursday 20190919

### आहार

**दुनिया के वैज्ञानिकों ने पहली बार माना कि दाल-चावल जैसे भारतीय भोजन आनुवांशिक बीमारियों को भी मात दे सकते हैं (Dainik Bhaskar: 20190919)**

[https://www.bhaskar.com/national/news/indian-food-such-as-lentils-and-rice-can-also-eliminate-genetic-diseases-01644883.html?utm\\_expid=.YYfY3\\_SZRPiFZGHcA1W9Bw.0&utm\\_referrer=https%3A%2F%2Fwww.bhaskar.com%2F](https://www.bhaskar.com/national/news/indian-food-such-as-lentils-and-rice-can-also-eliminate-genetic-diseases-01644883.html?utm_expid=.YYfY3_SZRPiFZGHcA1W9Bw.0&utm_referrer=https%3A%2F%2Fwww.bhaskar.com%2F)

जर्मनी की ल्यूबेक यूनिवर्सिटी के वैज्ञानिकों ने आनुवांशिक बीमारियों पर शोध किया

हाई कैलोरी वाले विदेशी भोजन आनुवांशिक बीमारियां बढ़ाते हैं

नई दिल्ली (अनिरुद्ध शर्मा). जर्मनी की ल्यूबेक यूनिवर्सिटी के शोध में पता चला है कि भारतीय आहार आनुवांशिक बीमारियों को भी मात दे सकता है। यह भी पता चला है कि बीमारियों का मुख्य कारक केवल डीएनए में गड़बड़ी नहीं है, बल्कि आहार उससे भी अधिक अहम है, जो बीमारी पैदा कर सकता है और उस पर लगाम भी लगा सकता है। यूनिवर्सिटी के प्रोफेसर राॅल्फ लुडविज के नेतृत्व में तीन वैज्ञानिकों द्वारा किया गया शोध 'नेचर' के ताजा अंक में प्रकाशित हुआ है। शोधकर्ताओं में रूस के डॉ. अर्तेम वोरोवयेव, इजराइल की डॉ. तान्या शेजिन और भारत के डॉ. यास्का गुप्ता शामिल हैं।

चूहों पर दो साल तक किए गए शोध में पाया गया कि पश्चिमी देशों के उच्च कैलोरी आहार जहां आनुवांशिक माने जाने वाले रोगों को बढ़ाते हैं जबकि भारतीय उपमहाद्वीप के लो कैलोरी आहार रोगों से बचाते हैं। डॉ. गुप्ता ने भास्कर को जर्मनी से बताया कि अभी तक तमाम आनुवांशिक रोगों को

केवल डीएनए के नजरिए से ही देखा जाता है, इस शोध में इसे आहार केंद्रित करके परखा गया। शोधकर्ताओं ने चूहों के उस समूह पर प्रयोग किया जो ल्यूपस नामक रोग से ग्रसित थे। ल्यूपस रोग का सीधा संबंध डीएनए से है। ल्यूपस ऑटोइम्यून रोग की श्रेणी में आता है और इसमें शरीर का प्रतिरोधक तंत्र अपने ही अंगों पर प्रहार करता है और शरीर के विभिन्न अंग व विभिन्न प्रणालियों जैसे जोड़ों, किडनी, दिल, फेफड़े, ब्रेन व ब्लड सेल को नष्ट करता है।

फास्टफूड आनुवांशिक रोगों को उभारते हैं

डॉ. यास्का गुप्ता ने बताया कि इस शोध के नतीजे सीधे तौर पर बता रहे हैं कि पश्चिमी देशों में आहार में लिए जाने वाले पिज्जा, बर्गर जैसे फास्टफूड आनुवांशिक रोगों को उभारने और बढ़ाने में मददगार बनते हैं, जबकि भारत का शाकाहारी आहार- स्टार्च, सोयाबीन तेल, दाल-चावल, सब्जी और विशेषकर हल्दी का इस्तेमाल इन रोगों से शरीर की रक्षा करने में सक्षम है।

चूहों के दो समूहों को अलग-अलग आहार देकर किया गया परीक्षण

चूहों के दो समूहों में एक को ज्यादा सूक्रोज वाला आहार दिया गया, जैसा पश्चिमी देशों में लिया जाता है। दूसरे समूह को लो कैलोरी वाला नियंत्रित आहार दिया गया, जैसा भारतीय उपमहाद्वीप में लिया जाता है। पहले समूह के चूहे ल्यूपस रोग की चपेट में आ गए और उनकी हालत गंभीर हो गई जबकि दूसरे समूह के चूहे जिन्हें लो कैलोरी डाइट दी गई थी वे ल्यूपस रोग से ग्रसित होने से बच गए।

## ई-सिगरेट

**आप नहीं पीते तब भी खतरनाक है ई-सिगरेट, जानिए आखिर ऐसा क्यों..? (Amar Ujala: 20190919)**

<https://www.amarujala.com/india-news/e-cigarette-is-dangerous-even-if-you-do-not-smoke?pageId=2>

क्या होती है ई-सिगरेट

इलेक्ट्रॉनिक सिगरेट या ई-सिगरेट एक बैटरी युक्त उपकरण है, जो निकोटिन वाले घोल को गर्म कर एयरोसोल पैदा करता है। इसके चलते जब कश लगाते हैं तो हीटिंग डिवाइस इसे गर्म करके भाप में बदल देती है। इसलिए इसे स्मोकिंग नहीं वेपिंग कहते हैं। इसका सीधे तौर पर छाती और मस्तिष्क पर बुरा असर पड़ता है। विकसित देशों में विशेषकर युवाओं और बच्चों में इसने एक महामारी का रूप ले लिया है।

1500 करोड़ रुपये का ब्लैक मार्केट है ई सिगरेट का

लंबे समय से ई सिगरेट पर काम कर रहे स्वास्थ्य मंत्रालय के एक वरिष्ठ निदेशक ने इसके हर छोटे बड़े पहलू पर अमर उजाला से बातचीत की। इनके अनुसार करीब 460 ई सिगरेट की कंपनियां देश में एक्टिव हैं। इनके करीब 7 हजार से ज्यादा फ्लैवर उत्पाद बाजारों में बिक रहे हैं जिनका कारोबार करीब 800 करोड़ रुपये के आसपास है, लेकिन इसका ब्लैक मार्केट करीब दोगुना यानि 1500 करोड़ रुपये का है। चीन, कोरिया, जापान और दुबई जैसे देशों से सीधे मुंबई, दिल्ली व गुजरात के रास्ते ई सिगरेट के उत्पादों को बाजारों तक लाया जा रहा है। चूंकि अभी तक कानून नहीं था, इसलिए दुकानों पर खुलेआम इसकी बिक्री होती थी। स्कूली बच्चों से लेकर 20 से 25 वर्ष तक की आयु के युवा अक्सर ई सिगरेट के साथ दिखते भी हैं।

दो साल से निजी कंपनियों का दबाव झेल रही सरकार

दो साल से केंद्र सरकार ई सिगरेट से जुड़ी नामचीन कंपनियों का दबाव भी झेल रही है। कई कंपनियों की ओर से अलग अलग राज्यों के हाईकोर्ट में याचिकाएं दायर की जा चुकी हैं। इतना ही नहीं अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) सहित देश के कई बड़े अस्पतालों के डॉक्टरों से भी ई सिगरेट की पैरवी करा चुके हैं। इतना ही नहीं दबाव बनाने के लिए निजी कंपनियां कई विदेशी रिसर्च तक सरकार के समक्ष रख चुकी हैं। अब तक ये कंपनियां चाहती थीं कि सरकार प्रतिबंध न लगाकर इनके नियमन पर काम करे। ताकि बाकी बीड़ी सिगरेट की तरह ई सिगरेट भी भारत में सख्त नियमों के साथ बिक्री हो सके। हालांकि एक सच ये भी है कि ई सिगरेट के दुष्प्रभावों को लेकर अब तक भारत के पास कोई भी सटीक अध्ययन नहीं है।

कैसे काम करती है ई-सिगरेट, क्यों लगाई जा रही है रोक

कैसे काम करती है ई-सिगरेट

बात करे ई-सिगरेट की तो यह एक ऐसी डिवाइस है जो बैटरी चार्ज करने पर काम करती है। इसमें निकोटिन और हानिकारक रसायन तरल रूप में एक रिफिल में होते हैं। जिन्हें डिवाइस में फिट किया

जाता है। इसके चलते जब कश लगाते हैं तो हीटिंग डिवाइस इसे गर्म करके भाप में बदल देती है। इसलिए इसे स्मोकिंग नहीं वेपिंग कहते हैं। इसका सीधे तौर पर छाती और मस्तिष्क पर बुरा असर पड़ता है। वित्तमंत्री ने बताया भारतीय खासतौर पर युवा और स्कूली बच्चे इस वेपिंग के कूल अंदाज की ओर तेजी से आकर्षित हो रहे हैं।

क्यों लगाई जा रही है रोक

सिगरेट पर रोक न लगाने की वजह केसवाल पर वित्तमंत्री ने कहा ई-सिगरेट पर केंद्र सरकार शुरुआती दौर में ही प्रतिबंध लगाने की पहल इसलिए कर रही है कि इस पर अभी रोक लगाना ज्यादा मुफिद है। इसके अलावा आखिल भारतीय आयुर्वेदिक अनुसंधान परिषद (आईसीएमआर) और टाटा रिसर्च सेंटर के विशेषज्ञों ने भी इस पर शोध करके प्रतिबंध लगाने की सिफारिश की थी। इसलिए इस मामले पर बनी मंत्रियों के समूह ने इसे शुरुआती दौर में ही प्रतिबंधित करने की सिफारिश की।

स्टॉक करके रखी है तो पास के पुलिस स्टेशन में जाएं

अध्यादेश के साथ ही यदि किसी के पास ई-सिगरेट का स्टॉक है। इस्तेमाल करते हैं या फिर बिक्री करते हैं तो उन्हें निकटतम पुलिस स्टेशन जाकर इसकी घोषणा करके जमा कराना होगा। अध्यादेश में इस तरह के मामलों पर कार्रवाई के लिए पुलिस उपनिरीक्षक स्तर के अधिकारी को नामित किया गया है। राज्य सरकार इसके समकक्ष के अधिकारी को भी नामित कर सकती है।

न्यूयॉर्क में फ्लेवर्ड ई-सिगरेट बैन, प्रतिबंध लगाने वाला दूसरा राज्य बना न्यूयॉर्क

दुनियाभर में फ्लेवर्ड वाली ई-सिगरेट के बढ़ते चलने के बाद इसके नकारात्मक प्रभाव को देखते हुए न्यूयॉर्क सिटी में इस पर बैन लगा दिया गया है। न्यूयॉर्क ई-सिगरेट पर बैन लगाने वाला दूसरा स्टेट बना गया है। न्यूयॉर्क के डोमेस्टिक गवर्नर ने टीनएजर्स और यूथ के बीच इस सिगरेट से बढ़ रही फेफड़ों से जुड़ी बीमारियों की बढ़ती संख्या पर चिंता जाहिर करते हुए इमरजेंसी मीटिंग बुलाई। जिसके बाद इस पर पूर्ण रूप से प्रतिबंध लगा दिया गया।

एंड्र्यू क्वोमो के कार्यालय की तरफ से जारी एक बयान में कहा गया है कि पैनल ने ई सिगरेट पर बैन के लिए मतदान के बाद मेन्थॉल के अलावा सभी फ्लेवर्ड ई-सिगरेट पर लागू कर दिया है। इस नियम के बाद ई-सिगरेट बेचने वाले रिटेलर्स को दो सप्ताह का समय दिया गया है।

यूनाइटेड स्टेट में मिशिगन के बाद न्यूयॉर्क सिटी दूसरा ऐसा राज्य बन चुका है, जहां फ्लेवर्ड ई-सिगरेट पर बैन लगाया जा चुका है। बैन के निर्णय के बाद एंड्र्यू क्वोमो ने कहा कि इस बात में कोई संदेह नहीं

है कि ई-सिगरेट उपलब्ध कराने वाली कंपनियों जानबूझकर बबलगम, कैप्टन क्रंच और कॉटन कैंडी जैसे फ्लेवर का उपयोग कर रही हैं ताकि युवाओं को इसकी ओर आकर्षित किया जा सके। यह एक सार्वजनिक स्वास्थ्य संकट का विषय है और आज यह समाप्त होता है।

## ई-सिगरेट (Hindustan: 20190919)

[http://epaper.livehindustan.com/imageview\\_260118\\_71240200\\_4\\_1\\_19-09-2019\\_8\\_i\\_1\\_sf.html](http://epaper.livehindustan.com/imageview_260118_71240200_4_1_19-09-2019_8_i_1_sf.html)

रिपोर्ट

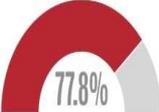
# ई-सिगरेट भी सामान्य जितनी नुकसानदायक

आपको धूम्रपान की लत है और सोचते हैं ई-सिगरेट पीने से नुकसान नहीं होगा और सिगरेट की लत छूट जाएगी तो आप गलत हैं। डब्ल्यूएचओ की मानें तो इसकी लत सामान्य सिगरेट जितनी ही खतरनाक है। इससे नुकसान कम है, यह कंपनियों के प्रचार की रणनीति है। डब्ल्यूएचओ ने 2019 वैश्विक तंबाकू महामारी रिपोर्ट में बताया कि सिगरेट पीने वाले निकोटीन छोड़ देंगे, तभी लाम मिलेगा।



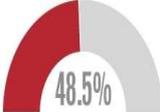
07

लोगों की मौत हो चुकी है अमेरिका में ई-सिगरेट के प्रभाव से



77.8%

की दर से वहां स्कूली छात्रों में इसकी लत बढ़ रही है



48.5%

की दर से बढ़ रही माध्यमिक विद्यालयों के छात्रों में

**भारत में निर्माण नहीं स्रस्रस्रस्र**  
ई-सिगरेट को इलेक्ट्रॉनिक निकोटीन डिलेवरी सिस्टम्स कहा जाता है। भारत में इसका विनिर्माण नहीं होता है। भारत की बड़ी सिगरेट कंपनियों भी आयात करती हैं।

**पारंपरिक पर असर नहीं**

- पारंपरिक तंबाकू उत्पादों पर इसका असर नहीं पड़ेगा
- भारत दूसरा सबसे बड़ा तंबाकू उपभोक्ता और तीसरा उत्पादक देश है

**ई सिगरेट के दुष्परिणाम**

- व्यक्ति के डीएनए को क्षतिग्रस्त कर सकता है
- सांस, हृदय और फेफड़े से संबंधित बीमारियां हो सकती हैं।  
(आईसीएमआर के मुताबिक)

**बड़ा कारोबार**

- 89.6 हजार करोड़ का बाजार है ई सिगरेट का
- 22 देश ई सिगरेट को कर चुके हैं प्रतिबंधित
- 1.3 अरब उपभोक्ताओं के संभावित बाजार पर असर पड़ेगा फैसले से

**सरकार ने इसलिए फैसला लिया**

वित्तमंत्री निर्मला सीतारमण ने कहा कि एम्स, टाटा मेमोरियल हॉस्पिटल, राजीव गाँधी कैंसर अस्पताल और कई अन्य संगठनों की रिपोर्ट के आधार पर सरकार ने यह निर्णय लिया है। भारतीय आयुर्विज्ञान अनुसंधान परिषद ने मई में इसपर पूरी तरह प्रतिबंध लगाने की सिफारिश की थी।

**सवाल कम या ज्यादा नुकसान का नहीं है।** लोगों में एक नई लत पड़ रही है जिसे समय पर रोकना जरूरी है। युवाओं के स्वास्थ्य को लेकर जोखिम नहीं लिया जा सकता।  
-प्रकाश जावड़ेकर, केंद्रीय मंत्री

यह फेफड़ों से संबंधित बीमारियों की बड़ी वजह बन रहा है। यह भारत जैसे विकासशील देश के लिए एक टाइम बम की तरह है। सरकार ने बैन कर सही दिशा में कदम बढ़ाया है।  
-रवि मेहरोत्रा, आईसीएमआर

## **Cabinet approves ban on e-cigarettes (The Hindu: 20190919)**

<https://www.thehindu.com/news/national/cabinet-decides-to-ban-e-cigarettes/article29448257.ece>

The Union Cabinet on Wednesday approved a ban on e-cigarettes, citing the need to take early action to protect public health.

Upon promulgation of the ordinance, any production, manufacturing, import, export, transport, sale (including online sale), distribution or advertisement (including online advertisement) of e-cigarettes shall be a cognisable offence punishable with imprisonment of up to one year, or fine up to ₹1 lakh, or both for the first offence; and imprisonment of up to three years and fine up to ₹5 lakh for a subsequent offence. Storage of electronic-cigarettes shall also be punishable with imprisonment of up to 6 months or a fine of up to ₹50,000 or both.

Children at risk

“Envisioned as a tool to combat tobacco addiction, electronic cigarettes and other vaping products have become a major problem and increase the risk of children adopting them,” Finance Minister Nirmala Sitharaman said at a media briefing.

As per a release issued by the Centre, owners of existing stocks of e-cigarettes on the date of commencement of the ordinance will have to suo motu declare and deposit these with the nearest police station.

# Up in smoke

Wednesday's move follows an advisory by the government in 2018 to all States to consider banning e-cigarettes

- e-cigarettes are brought from China and other countries and are not manufactured in India. They are also available online

- WHO too urged member countries to take appropriate steps. It does not endorse e-cigarettes as cessation aids

- 16 States & one Union Territory have already banned them. The Indian Council of Medical Research, in a recent paper, had recommended a complete ban on them



- They are marketed as being safer than conventional cigarettes but this is false. Available literature suggests that they may act as gateway products to induce non-smokers to nicotine-use

E-cigarettes do not help quit smoking

The sub-inspector has been designated as the authorised officer to take action under the ordinance. The Central or State governments may also designate any other equivalent officer(s) as authorised officer for enforcement of the provisions of the ordinance.

The Prohibition of E-cigarettes Ordinance, 2019, was recently examined by a Group of Ministers (GoM) following directions from the Prime Minister's Office. In the draft ordinance, the Health Ministry had proposed a maximum imprisonment of up to one year along with a penalty of ₹1 lakh against first time violators.

E-cigarettes are battery-operated devices that produce aerosol by heating a solution containing nicotine, which is the addictive substance in combustible cigarettes.

Cabinet approves ban on e-cigarettes

The Minister noted that as per data the misuse of e-cigarettes is very high among students. The Union Health Ministry had earlier issued an advisory to all States and Union Territories to ensure that Electronic Nicotine Delivery Systems (ENDS), e-cigarettes, heat-not-burn devices, vape, e-sheesha, e-nicotine flavoured hookah, and devices that enable nicotine

delivery are not sold (including online sale), manufactured, distributed, traded, imported and advertised in their jurisdictions.

Union Health Secretary Preeti Sudan had also written to the Commerce Secretary to block the entry of a U.S.-based company manufacturing vaping devices like e-cigarettes, into India stating that “if not prevented, [it] could undermine the efforts taken by the government towards tobacco control.”

The Indian Council of Medical Research (ICMR) too had cautioned against the growing use of e-cigarettes citing studies which noted that use of e-cigarettes could have adverse effects on humans, which include DNA damage, carcinogenic, cellular, molecular and immunological toxicity, respiratory, cardiovascular and neurological disorders, and adverse impact on foetal development and pregnancy.

The Association of Vapers India (AVI), an organisation that represents e-cigarette users across the country, slammed the government’s move, terming it ‘a black day’ for 11 crore smokers in India who had been deprived of safer options.

“The government may be patting its back for banning e-cigarettes but this is a draconian move considering the risk to the health of crores of smokers,” asserted Samrat Chowdhery, AVI director and harm reduction advocate. “On one hand, we talk about transitioning from a developing to developed nation but on the other we are closing our doors to new technology that has been embraced globally by governments and used by millions worldwide to quit smoking,” he added.

### **Why e-cigarettes bother the govt (The Indian Express: 20190919)**

<https://indianexpress.com/article/explained/why-e-cigarettes-ban-in-india-nirmala-sitharaman-nicotine-tobacco-6007826/>

Production and sale have been made a punishable offence. How widespread is their use in India? What are the health concerns around such products, and how do they compare with traditional tobacco?

First-time offenders may face imprisonment of up to one year, a fine up to Rs 1 lakh, or both.

On Wednesday, the Union Cabinet approved an ordinance prohibiting electronic cigarettes in the country. It makes production, manufacture, import, export, transport, sale, distribution, storage and advertisement of e-cigarettes and other Electronic Nicotine Delivery Systems (ENDS) such as vapes, e-hookahs and e-cigars a punishable offence.

First-time offenders may face imprisonment of up to one year, a fine up to Rs 1 lakh, or both. Subsequent offences may lead to up to three years' imprisonment and Rs 5 lakh in fine, while those found storing e-cigarettes and other such ENDS products will face up to six months in prison and up to Rs 55,000 in fines, or both.

What are e-cigarettes?

E-cigarettes are battery-powered devices that heat a solution of nicotine and different flavours to create aerosol, which is then inhaled. These devices belong to a category of vapour-based nicotine products called ENDS. E-cigarettes and other ENDS products may look like their traditional counterparts (regular cigarettes or cigars), but they also come in other shapes and sizes and can resemble daily use products, including pens and USB drives.

Several companies selling ENDS in India have positioned these products as a safer, less harmful alternative to traditional cigarettes or as devices that could help users quit smoking.

What is the size of the e-cigarettes market in India?

India's vapour products market was nascent, but expected to experience rapid growth. It was valued at over \$15 million in 2017, according to analyst reports, and projected to grow nearly 60 per cent a year up to 2022. A recent study by Prescient and Strategic Intelligence showed that India's e-cigarette market was expected to reach \$45.3 million by 2024, growing at a Compound Annual Growth Rate of 26.4 per cent.

E-cigarettes are the most common type of ENDS, with over 460 different brands and more than 7,700 flavours marketed in India currently. Imports of e-cigarettes, their accessories and other ENDS products grew around 119 per cent from 2016-17 to 2018-19.

Why does the government want to ban these devices?

The Health Ministry and Central Drugs Standards Control Organisation, India's drug regulatory authority, had attempted in the past to ban the import and sale of these products citing public health concerns. Before the ordinance was announced, the government had been facing hurdles in the form of court cases against the move, as ENDS were not declared as 'drugs' in the country's drug regulations.

Health Ministry sources earlier told The Indian Express these products have neither been assessed for safety in the national population, nor been approved under provisions of the Drugs and Cosmetics Act, 1940. Yet, they have been widely available to consumers, one of them had said. Though some smokers have claimed to have cut down smoking while using ENDS, the total nicotine consumption seemed to remain "unchanged", according to the government.

In May 2019, the Indian Council of Medical Research (ICMR) released a white paper stating that the uses of ENDS, or e-cigarettes, have "documented adverse effects" which include DNA damage; carcinogenesis (initiation of cancer formation); cellular, molecular and immunological toxicity; respiratory, cardiovascular and neurological disorders. It also

impacts foetal development and pregnancy, according to ICMR, which had recommended a “complete prohibition” of these products.

Who gains?

The government feels its decision will help “protect the population, especially youth and children, from the risk of addiction through e-cigarettes”. It says enforcement of the ordinance will complement its efforts to reduce tobacco use and, therefore, help in reducing the economic and disease burden associated with it.

Apart from this, traditional tobacco firms, too, could potentially gain from the ban. Share prices of some tobacco firms listed on the Bombay Stock Exchange like ITC, VST Industries, Golden Tobacco and even Godfrey Phillips India, which has its own portfolio of e-cigarettes for the Indian market, rose as much as 9 per cent intra-day on Wednesday. A closer look at the shareholding pattern of these companies shows that the central government, too, has the potential to benefit financially from this move, with central and state-owned firms making notional gains of nearly Rs 1,000 crore on Wednesday.

Trade representatives promoting e-cigarettes and a consumer body have questioned the need for rushing through an ordinance to ban such devices in the country. (file)

Does this mean traditional tobacco products are safer?

Traditional tobacco products like cigarettes and chewing tobacco are already known to be harmful. According to the CDC in the US, cigarette smoking harms “nearly every organ of the body, causes many diseases, and reduces the health of smokers in general”.

A study published in The Lancet found tobacco use was the “leading” risk factor for cancers in India in 2016. ICMR estimates that India is likely to face over 17 lakh new cancer cases and over eight lakh deaths by 2020. In 2018, India had nearly 27 crore tobacco users and a “substantial” number of people exposed to second-hand smoke, putting them at an increased risk for cardiovascular diseases, according to a fact sheet by the World Health Organization. Tobacco kills over 1 million people each year, contributing to 9.5 per cent of all deaths, it said.

US: Has the highest population of smokeless tobacco and vape-product users. Reports of over 400 hospitalisations and six deaths related to use of e-cigarette and vape uses. Plans to ban all e-cigarette flavours, except for tobacco.

UK: Says British vapers are safe, as the issues in the US are due to use of “illicit”, street-bought or home-made vaping fluid. Sales of ENDS products like vapes are legal. Introduced regulations for e-cigarette firms in 2016.

China: Houses a third of the world’s smokers. Has reportedly seen an increasing population of vapers, especially young people. Announced in July 2019 that it plans to regulate e-cigarettes to strengthen supervision of these products.

France: Allows sale of e-cigarettes as either medicines or consumer products, but those making health claims related to these products need marketing authorisation under standard drug licencing process. Those selling as consumer products are regulated by the country's May 2016 decree on vapour products containing nicotine.

Germany: Classifies nicotine-containing e-cigarettes as tobacco-related products and regulates it under country's 2016 law on Implementation of the Tobacco Products Directive and Related Products.

Japan: Non-nicotine e-cigarettes currently not regulated, but nicotine-containing e-cigarettes are classified as medicinal products and regulated under Japan's pharmaceutical affairs law. —Source: Johns Hopkins Institute for Global Tobacco Control, The Guardian, The Jakarta Post, CGTN

## **खतरनाक फ्लू**

**आ रहा सबसे खतरनाक वायरस, 36 घंटे में पूरी दुनिया में हो सकती है 8 करोड़ मौत (Dainik Jagran: 20190919)**

<https://www.jagran.com/world/other-who-alert-a-dangerous-flu-like-illness-could-travel-around-the-world-in-36-hours-and-kill-8-crore-people-jagran-special-19589602.html>

एक सदी पहले 1918 में ऐसे ही एक फ्लू ने पूरी दुनिया पर हमला किया था जिसमें पांच करोड़ से ज्यादा लोगों की मौत हुई थी। ये फ्लू उससे भी कहीं ज्यादा खतरनाक बताया जा रहा है।

नई दिल्ली, एजेंसी। दुनिया के सामने एक बहुत बड़ी चुनौती आने वाली है। ये चुनौती हवा में फैलने वाला एक खतरनाक वायरस होगा, जो दस्तक देने के 36 घंटे के अंदर पूरी दुनिया में फैल जाएगा। इसकी वजह से पूरी दुनिया में आठ करोड़ लोगों की मौत हो सकती है। विश्व स्वास्थ्य संगठन (WHO) के पूर्व प्रमुख ने ये अलर्ट जारी किया है। उन्होंने इसे अब तक का सबसे खतरनाक फ्लू (वायरस) बताया है। WHO ने भी इसके लिए तैयार रहने को कहा है।

विशेषज्ञों के अनुसार, करीब एक सदी पहले 1918 में स्पेनिश फ्लू महामारी (Spanish Flu Pandemic) ने दुनिया की आबादी के एक-तिहाई हिस्से को संक्रमित कर दिया था। इस फ्लू की वजह से पांच करोड़ लोगों की मौत हुई थी। अब जो फ्लू दस्तक देने वाला है, वह स्पेनिश फ्लू से भी कहीं ज्यादा खतरनाक है। विशेषज्ञों के अनुसार, ये फ्लू इसलिए भी ज्यादा खतरनाक होगा, क्योंकि स्पेनिश फ्लू के मुकाबले आज के दौर में पूरी दुनिया में काफी ज्यादा और तेजी से लोग एक देश से दूसरे देश की यात्राएं कर रहे हैं। इस लिहाज से आने वाला फ्लू पहले से ज्यादा खतरनाक साबित होगा और मात्र 36 घंटे में पूरी दुनिया में फैल जाएगा।

सभी देशों को जारी किया अलर्ट

विश्व स्वास्थ्य संगठन के पूर्व चीफ (former chief of the World Health Organization) के नेतृत्व वाली 'द ग्लोबल प्रीपेयर्डनेस मॉनिटरिंग बोर्ड' (The Global Preparedness Monitoring Board) के स्वास्थ्य विशेषज्ञों की टीम ने अपनी इस रिपोर्ट को सभी देशों के नेताओं को बचाव के लिए आवश्यक कदम उठाने के लिए भेजा है। बोर्ड द्वारा बुधवार को जारी रिपोर्ट में कहा गया है कि पूरी दुनिया में फैलने वाली इस महामारी की चेतावनी वास्तविक है।

अपर्याप्त हैं बचाव के मौजूदा प्रयास

विशेषज्ञों के अनुसार, बहुत तेज गति से फैलने वाला ये फ्लू बेहद खतरनाक है। इसमें 10 करोड़ लोगों की जान लेने की क्षमता है। साथ ही, इससे कई देशों की अर्थव्यवस्था बिगड़ने और राष्ट्रीय सुरक्षा के अस्थिर होने का भी बड़ा खतरा है। विशेषज्ञों ने अपनी इस रिपोर्ट को नाम दिया है 'ए वर्ल्ड एट रिस्क' (A World At Risk), जिसमें बताया गया है कि ये वायरस इबोला की तरह ही खतरनाक साबित हो सकता है। इबोला जैसे घातक वायरस के खतरे को देखते हुए मौजूदा वक्त में किए जा रहे प्रयास अपर्याप्त हैं।

मालूम हो कि इस खतरानाक वायरस का अलर्ट जारी करने वाली संस्था द ग्लोबल प्रीपेयर्डनेस मॉनिटरिंग बोर्ड (GPMB) का नेतृत्व नॉर्वे के पूर्व प्रधानमंत्री व WHO के महानिदेशक डॉ ग्रो हार्लेम ब्रुन्डलैंड (Dr Gro Harlem Brundtland) और इंटरनेशनल फेडरेशन ऑफ रेड क्रॉस (International Federation of Red Cross) व रेड क्रीसेंट सोसाइटीज (Red Crescent Societies) के महासचिव अल्हदज अस सय (Alhadj As Sy) कर रहे हैं। संस्था द्वारा जारी रिपोर्ट में कहा गया है कि उनके द्वारा पूर्व में जारी की गई इस खतरनाक फ्लू की रिपोर्ट को वैश्विक नेताओं ने पूरी तरह से अनदेखा कर दिया था। WHO ने भी इस रिपोर्ट पर मुहर लगा दी है।

मैप के जरिए बताया किन देशों को है खतरा

संस्था ने खतरनाक फ्लू की रिपोर्ट के साथ उसका शिकार होने वाले संभावित देशों के बारे में भी एक मैप के जरिए बताया है। इस मैप को नए उभरते और फिर से उभरते वायरस के खतरों के वर्ग में विभाजित किया गया है। मालूम हो कि दुनिया में इससे पहले भी पांच खतरनाक फ्लू इबोला, जीका और निपा जैसे खतरनाक वायरस हमला कर चुके हैं। इसके अलावा वेस्ट नील वायरस, एंटीबायोटिक प्रतिरोध, खसरा, तीव्र फ्लेसीड मायलाइटिस, पीला बुखार, डेंगू, प्लेग और ह्यूमन मंकीपॉक्स भी दुनिया के कुछ सबसे खतरनाक वायरस में शामिल हैं।

GPMB की रिपोर्ट

जीपीएमबी रिपोर्ट में चेतावनी दी गई है कि अब तक का सबसे खतरनाक वायरस पूरी दुनिया में पांच से आठ करोड़ लोगों की जान ले सकता है। ये वायरस सांस के जरिए हवा में तेजी से फैलेगा और महामारी का रूप ले लेगा। इसकी वजह से दुनिया की पांच फीसद अर्थव्यवस्था भी प्रभावित हो सकती है। दुनिया इस खतरे के लिए बिल्कुल तैयार नहीं है। इसकी वजह से बहुत से गरीब देशों में स्वास्थ्य सेवाएं चरमरा सकती हैं।

WHO ने भी जारी किया था अलर्ट

इस रिपोर्ट पर मुहर लगाते हुए WHO के महानिदेशक टेड्रोस एडनॉम गिबेयियस (Tedros Adhanom Ghebreyesus, director-general of the WHO) ने सभी देशों की सरकारों से आह्वान किया है कि वह इस खतरे से निपटने के लिए पुख्ता तैयारी रखें। उन्होंने कहा कि ये मौका है जब जी-7, जी-20 और जी-77 में शामिल देश बाकी दुनिया के लिए एक उदाहरण प्रस्तुत कर सकते हैं। हवा में फैलने वाले इस खतरनाक फ्लू का अलर्ट WHO द्वारा पहले भी जारी किया जा चुका है।

सबसे घातक रहा है 1918 का फ्लू

करीब एक सदी पहले 1918 में फैले एक जानलेवा वायरस ने दुनिया की एक तिहाई से ज्यादा आबादी पर हमला किया था। इसकी वजह से एक महीने के भीतर दुनिया भर में पांच करोड़ लोगों की मौत हो गई थी। ये आंकड़ा प्रथम विश्व युद्ध में हुई कुल मौतों से तीन गुना ज्यादा था। ये इतिहास में सबसे तेजी से फैलने वाला और सबसे जल्दी मौत के घाट उतारने वाला वायरस था। ज्यादातर वायरस का असर बच्चों, बुजुर्गों या शारीरिक रूप से कमजोर लोगों पर होता है। इसके विपरीत 1918 के इस फ्लू का शिकार सबसे ज्यादा स्वस्थ युवा हुए थे। इस फ्लू का सबसे ज्यादा असर जर्मनी, ब्रिटेन, फ्रांस, स्पेन और यूनाइटेड स्टेट्स पर हुआ था।

## **World not ready for pandemic threat (Hindustan Times: 20190919)**

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

Study WHO tracked 1,483 epidemics in 172 countries to prepare the report on assessment of global preparedness to face health emergencies

New Delhi : The world is not prepared for the next big pandemic, which can potentially spread between continents in 36 hours and kill up to 80 million people, disrupt economies, and destabilise national security, according to a new assessment of the global preparedness to confront health emergencies.

The World Health Organisation (WHO) has tracked 1,483 epidemics in 172 countries between 2011 and 2018, said the Global Preparedness Monitoring Board (GPMB) The World At Risk report released on Wednesday.

“Epidemic-prone diseases, such as influenza, severe acute respiratory syndrome (SARS), middle east respiratory syndrome (MERS), Ebola, Zika, plague, yellow fever and others, are harbingers of a new era of high-impact, fast-spreading outbreaks that are frequently detected and difficult to manage,” said the report, which is authored by 15 global scientists and public health leaders, including India’s principal scientific advisor Dr K VijayRaghavan.

A convergence of ecological, political, economic and social trends, including population growth, urbanisation, globally integrated economy, conflict, migration and climate change have raised the frequency and size of epidemics that upend economies and create social chaos.

The report outlines actions to prepare for and mitigate the risk of catastrophic global health emergencies. The report recommends increasing country preparedness by raising funding, doing more research into new technologies, vaccines and medicines, establishing communication systems, launching a coordinated government, industry and community response; and following through international commitments.

“Preparation for pandemic threats calls for high health system capability for prevention, effective surveillance, early detection and containment and appropriate management of any cases. This requires a sufficiently large and well skilled health workforce with public health expertise and well resourced health care infrastructure apart from robust health information systems that can provide early alerts. An adequate investment is needed in building such a competent health system,” said K Srinath Reddy, president, Public Health Foundation of India.

A pandemic equivalent to the 1918 Spanish Flu could kill 80 million and wipe out nearly 5% of the global economy, devastating health systems and hitting low-resourced communities the hardest, the report said.

Though steps have been taken to increase preparedness since the Ebola pandemic in West Africa five years ago, current efforts are insufficient, said the report. As of July 2019, 59 countries have developed a National Action Plan for Health Security, yet none of them have been fully financed.

India has handled the threats of Nipah and zoonotic influenza viruses quite well. However, the threat of a devastating pandemic looms large on the world and India remains highly vulnerable. “We need multisectoral actions, led by a well resourced and energetic health system, to keep our population protected,” said Reddy.

The GPMB calls for intergovernmental organisations, donors and multilateral institutions to strengthen funding mechanisms, information sharing and monitoring. It asks financing organisations like the International Monetary Fund and World Bank to integrate preparedness.

“The report focuses on the potential danger from epidemics and urges governments and international organisations to take proactive measures to prevent it. An important component is weather events like floods and cyclones, which exacerbate the potential of health emergencies like cholera. India has allocated ₹480 crore to the Coalition of Disaster Relief Preparedness for the next five years, which got the Cabinet nod last month, and we play an active part in the Coalition for Epidemic Preparedness Innovations, which is a global public-private coalition to stop epidemics by speeding up the development of vaccines. India has got an existing plan for response to epidemics, and as climate/change related and other health emergencies rise, link science and technology to health systems in the best possible way to mount an effective response,” said Dr Vijay Raghavan.

मेडिकल जर्नल लैसेट में प्रकाशित हुआ आईसीएमआर का अध्ययन, 1990 के मुकाबले 2017 में दो तिहाई घटी मृत्यु दर

# तीन में से दो बच्चों की मौत कुपोषण की वजह से हो रही

नई दिल्ली | विशेष संवाददाता

देश में हर तीन में से दो बच्चों की मौत कुपोषण से हो रही है। हालांकि पांच वर्ष तक के बच्चों की कुपोषण से मृत्यु की दर में 1990 के मुकाबले 2017 में दो तिहाई की कमी आई है। भारतीय चिकित्सा अनुसंधान परिषद् (आईसीएमआर), पब्लिक हेल्थ फाउंडेशन की अगुवाई में हुए अध्ययन में यह खुलासा हुआ। इंडिया स्टेट-लेवल डिजीज बर्डन इनिशिएटिव के तहत किया गया यह अध्ययन प्रसिद्ध मेडिकल जर्नल लैसेट में प्रकाशित हुआ है।



इसके अनुसार, कुपोषण सभी आयु वर्ग के लोगों के लिए बड़ा जोखिम है। बच्चों में यह खासतौर पर खतरनाक है। कुपोषण के संकेतकों में जन्म के समय शिशु का कम वजन मृत्यु के बड़े कारणों में शामिल है। अध्ययन के मुताबिक, भारत में

2017 में जन्म के समय शिशु का वजन बहुत कम होने के मामले 21 फीसदी थे। यूपी में सर्वाधिक 24% ऐसे शिशु जन्म लेते हैं। मिजोरम में ऐसे सबसे कम नौ फीसदी बच्चों ने जन्म लिया। 2017 में बच्चों के टिगने रहने के मामले 39% रह गए। इसमें भी यूपी की स्थिति सबसे

**राज्यवार कुपोषण के संकेतक** (आंकड़े 2017 के, प्रतिशत में)

राज्य	कम वजन	टिगनापन	मोटापा	खून की कमी
यूपी	24.2	49.0	13.0	66.7
बिहार	23.4	48.3	14.5	65.3
झारखंड	20.2	45.7	19.0	72.1
उत्तराखंड	22.6	32.4	11.1	62.5
दिल्ली	23.1	32.3	13.8	70.3

खराब है। यहां सबसे अधिक 49% बच्चे टिगनेपन से पीड़ित रहे। वहीं, गोवा में यह आंकड़ा सबसे कम 21.3% रहा। इसी तरह 60% बच्चों में खून की कमी मिली। हरियाणा में सर्वाधिक 74% बच्चे पीड़ित मिले। **हिन्दीभाषी राज्यों में बदहाली:** कुपोषण की स्थिति के आधार पर

तीन श्रेणियां लो एसडीआई (सोशियो डेमोग्राफिक इंडेक्स) राज्य, मिडिल व हाई एसडीआई राज्य रखी गई थीं। इसमें हरियाणा, दिल्ली, उत्तराखंड के अलावा सभी हिन्दी राज्य लो एसडीआई समूह में हैं। हरियाणा मिडिल और उत्तराखंड हाई एसडीआई राज्यों में रहे।

**Two out of three child deaths due to malnutrition: report (The Hindu: 20190919)**

<https://www.thehindu.com/sci-tech/health/two-out-of-three-child-deaths-due-to-malnutrition-report/article29453193.ece>

Poor diet: Malnutrition is still the leading risk factor for death in children under five years.

Analysis of health data finds that Assam, Bihar, Rajasthan and U.P. are the most affected States

Two-thirds of the 1.04 million deaths in children under five years in India are still attributable to malnutrition, according to the first comprehensive estimate of disease burden due to child and maternal malnutrition and the trends of its indicators in every State from 1990.

The report states that the disability-adjusted life year (DALY) rate attributable to malnutrition in children varies 7-fold among the States and is highest in Rajasthan, Uttar Pradesh, Bihar and Assam, followed by Madhya Pradesh, Chhattisgarh, Odisha, Nagaland and Tripura.

The report was published on Wednesday in *The Lancet Child & Adolescent Health* by the India State-Level Disease Burden Initiative. The report says the overall under-five death rate and the death rate due to malnutrition has decreased substantially from 1990 to 2017, but malnutrition is still the leading risk factor for death in children under five years, and is also the leading risk factor for disease burden for all ages considered together in most States.

The malnutrition trends over about three decades reported in this paper utilised all available data sources from India, which enable more robust estimates than the estimates based on single sources that may have more biases.

The India State-Level Disease Burden Initiative is a joint initiative of the Indian Council of Medical Research (ICMR), Public Health Foundation of India, and Institute for Health Metrics and Evaluation in collaboration with the Ministry of Health and Family Welfare along with experts and stakeholders associated with over 100 Indian institutions, involving many leading health scientists and policy makers from India.

Vinod K. Paul, member, NITI Aayog, said that the government is now intensifying its efforts to address the issue of malnutrition across the country. “State governments are being encouraged to intensify efforts to reduce malnutrition and undertake robust monitoring to track the progress,” he said.

Balam Bhargava, Director General, ICMR said: “The National Institute of Nutrition, an ICMR institute, and other partners are setting in place mechanisms to ensure that there is more data available on malnutrition in the various States which will help monitor progress. The findings reported in the paper published today highlight that there are wide variations in the malnutrition status between the States. It is important therefore to plan the reduction in malnutrition in a manner that is suitable for the trends and context of each State.”

### Low birth weight

Senior author of the paper Lalit Dandona, also director of the India State-Level Disease Burden Initiative, explained that the study reports that malnutrition has reduced in India, but continues to be the predominant risk factor for child deaths, underscoring its importance in addressing child mortality. “It reveals that while it is important to address the gaps in all malnutrition indicators, low birth weight needs particular policy attention in India as it is the biggest contributor to child death among all malnutrition indications and its rate of decline is among the lowest. Another important revelation is that overweight among a subset of children is becoming a significant public health problem as it is increasing rapidly across all States,” he said.

Soumya Swaminathan, chief scientist at the World Health Organisation and first author on this paper, noted that the study findings have highlighted where efforts need to be intensified.

“For substantial improvements across the malnutrition indicators, States will need to implement an integrated nutrition policy to effectively address the broader determinants of under-nutrition across the life cycle. Focus will be needed on major determinants like provision of clean drinking water, reducing rates of open defecation, improving women’s educational status, and food and nutrition security for the most vulnerable families,” she explained.

### **One in three Indian kids underweight (The Tribune: 20190919)**

<https://www.tribuneindia.com/news/nation/one-in-three-indian-kids-underweight/834798.html>

The disease and disability burden from malnutrition was the highest in Uttar Pradesh, Bihar, Assam and Rajasthan.

Malnutrition was the predominant cause of death in children younger than five years in all India states in 2017 and accounted for 68.2 per cent of all under-five deaths. A new research published in The Lancet Child and Adolescent Health today on disease burden attributable to child and maternal malnutrition in India reveals that malnutrition was also the leading risk factor for health loss for all ages.

The disease and disability burden from malnutrition was the highest in Uttar Pradesh, Bihar, Assam and Rajasthan.

The paper authored by ICMR and Public Health Foundation of India experts shows India struggling to address child malnutrition which has three major indicators — underweight children, stunted and wasted children. The prevalence of child underweight in India was 32.7 per cent in 2017; child stunting was 39.3 per cent and child-wasting (low weight for height) 15.7 per cent. This means nearly one in three children were underweight and two in five were stunted.

The prevalence of child anaemia in the country was 60 per cent in 2017 and ranged from 21 per cent in Mizoram to a high of 74 per cent in Haryana. Haryana posted the highest prevalence of child anaemia in the country, as per the Lancet paper. Overall, the annual rate of reduction in child anaemia was 1.8 per cent nationally (1990-2017) which varied from 8.3 per cent in Mizoram to nearly nil in Goa.

“If trends estimated up to 2017 for the indicators in the National Nutrition Mission 2022 continue, there would be 8.9 per cent excess prevalence for 9.6 per cent for stunting, 4.8 per cent for underweight and 11.7 pc for anaemia in children relative to 2022 targets,” concludes the paper.

The authors also point out the death rate attributable to malnutrition in under-five children in India has dropped by two-thirds from 1990 to 2017 but continues to be a challenge due to very low annual drop in the prevalence of major malnutrition indicators.

**Telling Numbers: The burden of malnutrition in under-5 children, state by state (The Indian Express: 20190919)**

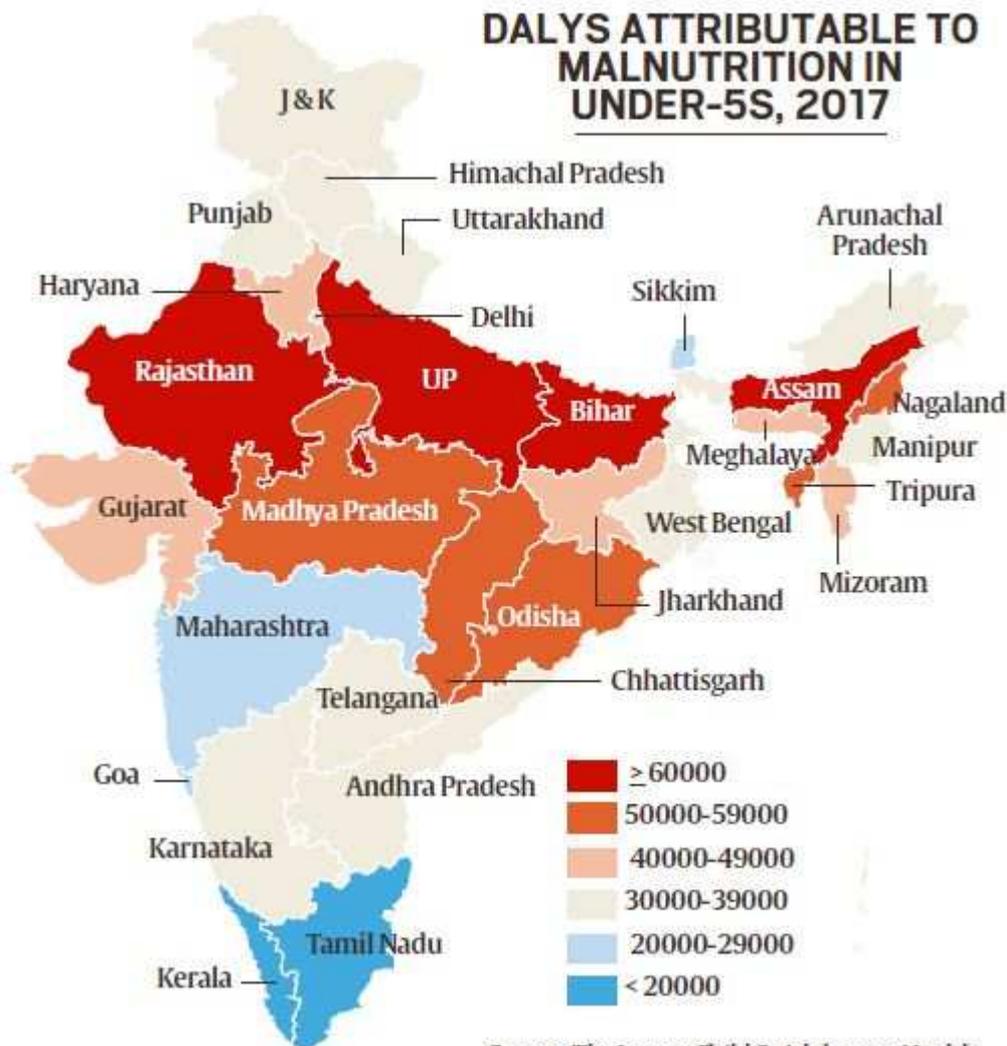
<https://indianexpress.com/article/explained/the-burden-of-malnutrition-in-under-5-children-state-by-state-6007859/>

The proportion of under-5 deaths attributable to malnutrition, which is 68.2% across India, ranges between a high of 72.7% in Bihar and a low of 50.8% in Kerala.

Malnutrition is still the underlying risk factor for 68% of the deaths in under-five children in India.

A report published Wednesday in The Lancet Child & Adolescent Health gives comprehensive estimates of disease burden due to child and maternal malnutrition and the trends of its indicators in every state of India from 1990 to 2017. Key findings include:

The death rate attributable to malnutrition in under-5 children in India has dropped by two-thirds from 1990 to 2017. Malnutrition is, however, still the underlying risk factor for 68% of the deaths in under-five children in India.



The Disability-Adjusted Life Years (DALY) rate attributable to malnutrition in children varies 7-fold among the states — a gap between a high of 74,782 in Uttar Pradesh and a low of 11,002 in Kerala. Other states with a high burden are Bihar, Assam and Rajasthan, followed by Madhya Pradesh, Chhattisgarh, Odisha, Nagaland and Tripura.

The proportion of under-5 deaths attributable to malnutrition, which is 68.2% across India, ranges between a high of 72.7% in Bihar and a low of 50.8% in Kerala. Rajasthan, Chhattisgarh and Uttar Pradesh are states with a high such proportion, while Meghalaya, Tamil Nadu, Mizoram and Goa have the lowest proportions of such deaths.

## PROPORTION OF TOTAL DEATHS IN UNDER-5 ATTRIBUTABLE TO MALNUTRITION AND ITS COMPONENTS, 2017

	BOYS	GIRLS	BOTH
Child & maternal malnutrition	69.1%	67.3%	68.2%
Low birth weight & short gestation	49.4%	42.7%	46.1%
Stunting, wasting, underweight	19.1%	23.7%	21.4%
Vitamin A deficiency	4.97%	5.62%	5.29%
Zinc deficiency	0.35%	0.48%	0.42%

Among the malnutrition indicators, low birth weight is the largest contributor to child deaths in India, followed by child growth failure which includes stunting, underweight, and wasting.

### **Dengue, chikungunya and Zika virus**

#### **Transgenic mosquitoes transfer genes to native mosquito species (The Hindu: 20190919)**

<https://www.thehindu.com/sci-tech/science/transgenic-mosquitoes-transfer-genes-to-native-mosquito-species/article29446151.ece>

A.aegypti mosquitoes are responsible for transmitting dengue, chikungunya and Zika virus.

Contrary to claims made, genes from genetically-modified *Aedes aegypti* mosquito were found to have been transferred to naturally-occurring *A. aegypti* mosquito population in three areas in Brazil where transgenic mosquitoes were released. It is unclear if the presence of transgenic mosquito genes in the natural population will affect the disease transmission capacity or make mosquito control efforts more difficult. *A.aegypti* mosquitoes are responsible for transmitting dengue, chikungunya and Zika virus.

About 4,50,000 transgenic male mosquitoes were released each week for 27 months (June 2013 to September 2015) in three areas in Brazil. Genetic analysis of naturally occurring mosquitoes were done prior to the release and at six, 12, and 27-30 months after the releases.

Researchers from Yale University studied 347 naturally-occurring *A. aegypti* mosquitoes for transfer of genes from the transgenic insects. The transgenic strains can be distinguished from naturally-occurring mosquitoes by using fluorescent lights and filters. They found that some transgenic genes were found in 10-60% of naturally-occurring mosquitoes. Also, the naturally occurring *A. aegypti* mosquitoes carrying some genes of the transgenic mosquitoes

were able to reproduce in nature and spread to neighbouring areas 4 km away. The results were published in the journal Scientific Reports.

The genetic strategy employed to control *A. aegypti* population known as RIDL (the Release of Insects carrying Dominant Lethal genes) is supposed to only reduce the population of the naturally occurring *A. aegypti* mosquitoes and not affect or alter their genetics. Also, offspring are not supposed to grow to adult mosquitoes and reproduce as per claims made by the British company Oxitec Ltd, which had developed the technology and field-tested it in several countries.

“The claim was that genes from the release strain would not get into the general population because offspring would die. That obviously was not what happened,” senior author Prof. Jeffrey Powell from Yale University was quoted as saying on the University website.

The genetic strategy works on the premise that the transgenic male mosquitoes released frequently in large numbers would compete with the naturally occurring male mosquitoes to mate with the females. Offspring from the mating of transgenic male mosquito and naturally occurring female mosquito do not survive to the adult stage. This is because tetracycline drug, which prevents the dominant lethal gene from producing the lethal protein during rearing in labs, is not present in sufficient quantity in nature. In the absence of tetracycline, there is overproduction of the lethal protein causing the larvae to die.

## **Fertility rate in India**

**Focusing on health, education of women will bring down population, increase work participation (The Indian Express: 20190919)**

<https://indianexpress.com/article/opinion/columns/total-fertility-rate-population-explosion-6007821/>

Policy-making in India has in recent decades been generally neutral to data and research. However, in matters of demography, particularly while prescribing strong punitive measures for having large families, decisions must be taken based on rigorous analysis of the data to avoid a China type crisis.

The writer is Distinguished Fellow at the Research and Information System for Developing Countries

A reduction in the share of children and an increase in the adult population are important for achieving a high rate of economic growth since it will lead to an increase in the percentage of the working population.

The World Population Prospects 2019 has reported that India's total fertility rate (TFR) has declined from 5.9 in early Sixties to 2.4 to 2010-15. TFR is defined as the total number of children to be born to women in her lifetime by the current age specific fertility rates. By 2025-30, it will fall to 2.1, sliding further to 1.9 during 2045-50. As per the National Family Health Survey (NFHS), India's TFR declined from 2.7 in 2005-6 to 2.2 in 2015-16. When the TFR touches 2.1, which is called replacement fertility level, we can say that the population is getting stabilised, subject to the momentum factor. India's population was predicted to peak at 1.7 billion in 2060, declining to 1.5 billion by 2100. The faster decline in TFR, as reported by NFHS, suggests that these can happen much earlier than predicted. Thus, there seems to be no reason for panic in the context of the demographic trends.

The increased acceptance of contraceptives is just one of the factors for the decline of TFR. Data from various NFHS rounds do not show a significant increase in contraceptive practices by married women. The percentage of women using modern contraceptive methods too has not increased much. This was the case between 2005-6 and 2015-16 as well — the period recorded a high decline in TFR. The main factor which led to this significant decline is the rise in the age of marriage. The NFHS 2015-16 records that among married women in 20-24 age group, persons who were either pregnant or had a baby at or before the age of 18, declined from 48 per cent in 2005-06 to 21 per cent in 2015-16. The country has this demographic advantage primarily due to an increase in the age at the first child birth. No increase being reported in contraceptive use is understandably due partly to the increase in the age of marriage, as younger couples are more likely to opt for these methods than older ones.

The decline in TFR would lead to reduction in the dependency rate. A reduction in the share of children and an increase in the adult population are important for achieving a high rate of economic growth since it will lead to an increase in the percentage of the working population. India is expected to grow at least 6.5-7.5 per cent per annum in the coming three decades, as per the predictions of the Asian Development Bank. This record growth can be achieved largely due to a demographic dividend and other structural factors, the present economic crisis notwithstanding.

The scenario of high income growth in India is critically dependent on the increase in the work participation rate and skill development. In order to achieve the predicted growth rate, an increase in the percentage of women participating in the workforce is a must. Despite the declining trend in the percentage of working women, the trend of sharp decline in TFR and rise in age of marriage suggest that this is feasible. A sharp rise in migration of women for employment reasons further corroborates this point.

The high level of poverty and illiteracy among the Muslim community explains its larger "desired number of children", than other communities. The situation, however, is changing

dramatically. In 2005-6, the TFR for Muslims was 3.4 which fell to 2.6 in 2015-16, a decline of 0.8 percentage points. For the Hindus, TFR declined from 2.6 in 2005-06 to 2.1 in 2015-16 — a fall of 0.5 points. The fall for Christians and Sikhs was just 0.3 percentage points. This is due to improvement in education status and benefits of economic development and modernity reaching the marginalised communities. Clearly, the acceptance of non-terminal and spacing methods of family planning have gone up among Muslim women, although terminal methods such as sterilisation are not very popular. Primary health and education has played an important role in bringing down their TFR. The decline, as a result of spread of primary education, is universal but the impact is higher for Muslim women, as revealed through NFHS data.

The lower rate of school attendance and less years spent in schools by Muslims is due to poverty, as young boys enter the labour market very early. Girls drop-out of schools due to traditional and cultural factors, besides the need to take care of young siblings. There are pointers towards exclusionary socio-economic trends.

The labour market scenario is changing fast with modern ideas seeping into the communities, bringing about attitudinal changes. More Muslim girls/women are entering schools and colleges as well as the labour market. The fact that educated Muslim women report very high unemployment rate is an evidence that the societal norms have been relaxed, permitting many more of them to seek jobs than the capacity of the labour market to absorb.

Historically, Muslims have fared worse in education than other communities. In pre-Partition days, their literacy rate was higher than those of Scheduled Castes and Scheduled Tribes. This changed during partition as many educated Muslims opted to move to Pakistan. Over the past seven decades, Muslim literacy has increased sluggishly. During the past decades, SCs/STs have benefitted due to reservations and scholarships. Muslims did not have this advantage.

Policy-making in India has in recent decades been generally neutral to data and research. However, in matters of demography, particularly while prescribing strong punitive measures for having large families, decisions must be taken based on rigorous analysis of the data to avoid a China type crisis. There has been talk of measures to control population, independent of caste and community considerations. However, most of the “target districts” recording TFR above 3.5 have a large Muslim population. It would be important to promote health and education in these districts, focusing on women, to bring down population growth effectively and increase work participation, needed for realisation of the demographic dividend.

This article first appeared in the print edition on September 19, 2019 under the title ‘For the demographic dividend’. The writer is Distinguished Fellow at the Research and Information System for Developing Countries.

## Obesity

### Obesity in children on rise in India; problem has just begun, say experts (Hindustan Times: 20190919)

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

New Delhi : While malnutrition continues to remain a leading risk factor for deaths in under-5 children, accounting for 68.2% of the total under-5 deaths, at least 11.5% of children between the age of 2 and 4 years are overweight, shows a study published in the leading medical journal The Lancet on Wednesday.

The prevalence of obesity in Indian children increased significantly during 1990-2017, which is the period of the study, with an annual rise of 4.98%. The projected prevalence is 17.5% in 2030, an estimate which is worrying experts.

“It is a matter of concern as we have seen through certain other studies that about 9% children are pre-diabetic. A lot is to be blamed on their lifestyle which is largely sedentary, and wrong eating habits,” said Dr Vinod Paul, member, Niti Aayog.

The estimates were published in The Lancet Child & Adolescent Health by the India State-Level Disease Burden Initiative, a collaboration between the Indian Council of Medical Research (ICMR), the Public Health Foundation of India (PHFI), Institute for Health Metrics and Evaluation (IHME).

The study shows 23 states have child overweight prevalence higher than the national prevalence, with Telangana and Delhi having prevalence as high as 23.2% and 23.1% respectively. At least 6 states have child overweight prevalence of more than 20%. “The problem of overweight or obese children has just started, and we have enough indicators before us to warn us that time is now to act. However, we must not forget that malnutrition in children in India is a bigger problem,” said Dr Balram Bhargava, director, ICMR.

The researchers analysed the disease burden, attributable to child and maternal malnutrition, and the trends in the malnutrition indicators from 1990 to 2017 in every state of India using all accessible data from multiple sources, as part of Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017.

## Medical Device (The Asian Age: 20190919)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=13786852>

# New VR tool may help boost mental health

## The tool allows people to capture life events, upload digital content and reflect: Researchers

**London, Sept. 18:** Researchers are developing a personalised, therapeutic virtual reality (VR) tool which may enable new forms of self-reflection, and help improve and maintain positive mental health.

The VR tool being developed by researchers from the University of Sheffield in the UK can be used by people with common mental health problems to create an immersive version of their journey through life.

The tool allows people to capture life events, upload

relevant digital content and reflect on their thoughts and feelings in great detail, researchers said. As well as helping with better mental health, this approach could also be beneficial for people in the early stages of dementia, those receiving end-of-life care and those with addiction problems or long-term physical conditions.

Around one in four UK adults has a mental health condition, with depression and anxiety being the most common, the researchers said.



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There is a widely-recognised urgent need to find approaches to treatment which are cost effective and attractive, particularly for those who do not

benefit from existing services, they said.

“With more people seeking help with mental health problems, and increasing pressure on

existing services, new ways of intervening faster and more effectively to help people are needed, and the use of new technology is one way of improving care; making it more personalised and engaging,” said Chris Blackmore, from the University of Sheffield’s School of Health and Related Research (SchARR).

“Previous research has shown that recovery from an experience such as depression is a complex, personal journey and a proactive personalised

approach to understanding people’s individual needs would be a valuable component of treatment,” said Blackmore.

“This narrative approach to treatment of common mental health problems is favoured by users of mental health services, but that level of choice is often unavailable.

“We wanted to develop a tool which puts people’s own personal experience at the centre of things, and helps them to tell their life-stories in a new way,” he said. — PTI

## Flu Vaccine

### New flu vaccine skin patch could do away with needles (Medical News Today: 20190919)

<https://www.medicalnewstoday.com/articles/326382.php>

Scientists are hopeful that a new type of skin patch could replace needles as a method of flu vaccination. When they tested the skin patch on mice, it elicited an appropriate immune response without side effects.

New flu vaccine research introduces an innovation that may do away with needles altogether.

A recent Journal of Investigative Dermatology paper gives a full account of the research.

"Scientists have been studying needle free vaccine approaches for nearly 2 decades," says study author Benjamin L. Miller, Ph.D., "but none of the technologies have lived up to the hype."

Miller is a professor of dermatology at the University of Rochester Medical Center, NY. He is also one of the two corresponding authors of the study.

The Centers for Disease Control and Prevention (CDC) estimate that the flu caused 48.8 million illnesses, 959,000 hospitalizations, and 79,400 deaths in the United States during the 2017–2018 season.

That season had an unusually high flu burden that was severe across all age groups.

Eczema inspires a new method of delivery

Prof. Miller and his colleagues believe that the new flu vaccine skin patch solves many of the problems that other developers have faced.

In their study paper, the authors explain how previous attempts to deliver a flu vaccine with skin patches have used techniques such as microneedles and electroporation.

However, while enjoying early success, these methods have proved difficult to "implement on a large scale for mass vaccination strategies."

How certain bacteria protect us against flu

New research finds that people with certain bacterial communities in the nose and throat are less susceptible to influenza.

In contrast to these techniques, the new patch uses a novel approach that came to researchers when they investigated the biology of atopic dermatitis, or eczema.

In people with eczema, the skin barrier that normally prevents toxins and allergens from entering the body stops working properly and becomes permeable, or leaky.

The protein claudin-1 is essential for preventing leakiness of the skin barrier. People with eczema have low levels of claudin-1 compared with those without the skin condition.

In previous work, the researchers had shown that reducing claudin-1 in skin cells of healthy people increased leakiness.

This result made them wonder whether they could use a similar method to get a flu vaccine virus into the body through the skin.

The challenge would be to induce leakiness for a length of time that lets in the vaccine virus but does not allow other materials to enter.

Skin patch boosted immunity

Through a series of experiments with human skin cells, the team identified a peptide, or small protein, that can disrupt the skin barrier without causing toxic side effects. The peptide works by binding to and blocking claudin-1.

The researchers then created a skin patch containing the peptide and a recombinant flu vaccine and tested it in two ways on mice.

In the first test, they applied the skin patch and then gave the mice a flu vaccine by injection. Their aim was to prime the immune system with the patch and then boost immunity with the flu shot.

In the second test, the team gave the mice the flu shot first and then applied the skin patch. Here, the aim was the other way around: prime the immune system with the flu shot and boost it with the skin patch.

In both tests, in which the mice wore the patch on their shaved back for 18–36 hours, the patch opened the skin barrier. The researchers confirmed this by monitoring the water that the mice lost through their skin.

When they applied the patch, the researchers saw the mouse skin become permeable. However, as soon as they removed the patch, they noted that the skin began to close again, meaning that it was back to normal within 24 hours.

The immune response to the patch in the first test was not significant. However, there was a robust immune response to the skin patch in the second test.

Given that "[h]umans are exposed to influenza as young as 6 months of age" and that as a consequence, most people's immune systems are already primed to the virus, the second test best mimics a real world scenario.

Therefore, these findings would suggest that the skin patch could serve as a delivery mechanism for the regular seasonal flu vaccine.

Another notable result was that the researchers saw no side effects. They monitored the mice for 3 months and observed no physical changes in their skin, such as those that might arise from infections.

Cheap and safe way to deliver vaccines

It will be some time before the skin patch is ready for human trials. The researchers need to run more animal studies to find out, for instance, how long the patch should remain on the skin for optimum results.

The researchers believe that should the skin patch pass flu trials in humans, the technique could work for other vaccines that currently require needles.

While they are effective, needle based vaccines can cause people distress, and they require medical staff to deliver them. In addition, needles are biohazardous waste and require careful handling.

These barriers are particularly acute in less developed countries, which also happen to have the greatest need for vaccines.

Delivery by means of a skin patch could be a quick and cheap way to vaccinate large numbers of people.

"If you want to vaccinate a village in Africa, you don't want to do it with needles," Prof. Miller explains.

"A patch doesn't have to be refrigerated, it can be applied by anyone, and there are no concerns about disposal or needles getting reused."

Prof. Benjamin L. Miller

## **Cancer**

### **Cancer: Why drug testing needs to improve (Medical News Today: 20190919)**

<https://www.medicalnewstoday.com/articles/326384.php>

Researchers keep on developing new drugs to fight cancer, and while some are indeed effective, others never fulfill their promise. A new study now explains why many cancer drugs may not work in the way their developers think they do. But within the problem also lies the solution.

A new study finds that many new cancer drugs may not work as intended.

Cancer affects millions of people around the world, and in some cases, it does not respond to the forms of therapy that doctors usually prescribe.

For this reason, researchers keep on looking for ever more effective drugs that can stop cancer in its tracks. Sometimes, these new therapeutics live up to their developers' expectations, while at other times they fall short.

As the search for improved anticancer drugs continues, a new study has discovered that many of the new medications that do work often target different mechanisms than those the scientists intended them for.

This may also explain why many new drugs fail to work.

The finding comes from a team of scientists at the Cold Spring Harbor Laboratory in New York, who originally set out to study a different issue. Jason Sheltzer, Ph.D., and team initially wanted to identify the genes that had links to low survival rates among people receiving cancer treatment.

But this work led them to find something they did not expect: that MELK, a protein formerly linked with cancer growth, does not affect tumor progression.

Because cancer tumors contain high levels of MELK, researchers had thought that cancer cells used this protein to proliferate. They thought that by stopping MELK production, this would also slow down tumor growth.

However, Sheltzer and colleagues found that this was not true. When they used specialized gene-editing technology (CRISPR) to "switch off" the genes that encoded MELK production, it turned out that this did not affect cancer cells, which kept increasing as before.

If a therapeutic target that researchers believed held so much promise did not work in the way that scientists had expected, could this also be true of other therapeutic targets? "My intention was to investigate whether MELK was an aberration," notes Sheltzer.

False premises for new drugs?

In the current study — whose results appear in the journal *Science Translational Medicine* — Sheltzer and colleagues investigated whether the described "mechanism of action" of 10 new drugs accurately represents how the drugs work.

Researchers tested all 10 drugs in clinical trials, with the help of approximately 1,000 volunteers, all of whom had received a cancer diagnosis.

"The idea for many of these drugs is that they block the function of a certain protein in cancer cells," explains Sheltzer.

"And what we showed is that most of these drugs don't work by blocking the function of the protein that they were reported to block. So that's what I mean when I talk about mechanism of action," Sheltzer continues.

The researcher also suggests that "[i]n some sense, this is a story of this generation's technology." The investigators explain that before gene-editing technology became a more widespread means of stopping protein production, scientists used a technique that allowed them to act on RNA interference.

Cancer is now the leading cause of death in wealthy countries

New research warns that cancer has now become the leading cause of death in high income countries.

This is a biological process through which RNA molecules help to regulate the production of specific proteins. However, the researchers explain that this method can be less reliable than using CRISPR technology. Moreover, it could stop the production of proteins other than the ones initially intended.

So the team proceeded to test the accuracy of the drugs' mechanism of action by using CRISPR. In an experiment, they focused on a drug under trial that is meant to inhibit the production of a protein called "PBK."

The result? "It turns out that this interaction with PBK has nothing to do with how it actually kills cancer cells," says Sheltzer.

Finding the real mechanism of action

The next step was to find out what the drug's actual mechanism of action was. To do this, the researchers took some cancer cells and exposed them to the supposedly PBK-targeting drug in high concentrations. Then, they allowed the cells to adapt and develop resistance to that drug.

"Cancers are highly genomically unstable. Because of this inherent instability, every cancer cell in a dish is different from the one next to it. A cancer cell which randomly acquires a genetic change that blocks the effectiveness of a drug will succeed where the others are killed," Sheltzer explains.

"We can take advantage of this. By identifying that genetic change, we can [also] identify how the drug was killing cancer," he goes on.

The researchers found that the cancer cells they used developed their resistance to the drug by evolving a mutation in a gene that produces another protein: CDK11.

The mutations meant that the drug could not interfere with the protein's production. This suggested that rather than PBK, CDK11 may be the real target of the drug under trial.

"A lot of drugs that get tested in human cancer patients tragically don't end up helping cancer patients," notes Sheltzer. He adds that if scientists changed the way in which they conduct preclinical testing, they could gain a more accurate understanding of how drugs work, and whom they are most likely to help.

"If this kind of evidence was routinely collected before drugs entered clinical trials, we might be able to do a better job assigning patients to therapies that are most likely to provide some benefit. With this knowledge, I believe we can better fulfill the promise of precision medicine."