



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20190924

कुपोषण

एक साल में 10 लाख 40 हजार बच्चों की मौत, 7 लाख से ज्यादा बच्चों की मौत की वजह कुपोषण
(Dainik Bhaskar: 20190924)

<https://www.bhaskar.com/chhattisgarh/raipur/news/10-lakh-40-thousand-children-died-in-a-year-01644889.html>

छत्तीसगढ़ के 45.7 फीसदी बच्चों और 53.1% महिलाओं में खून की कमी

पवन कुमार| नई दिल्ली . देश में पांच वर्ष की उम्र तक के 10 लाख 40 हजार बच्चों की मौत एक वर्ष में हुई जिसमें सात लाख छह हजार बच्चों की मौत की वजह कुपोषण है। इसमें से सात लाख, छह हजार बच्चों की मौत की वजह कुपोषण है। यह अंकड़ा 2017 का है। 27 साल पहले इस उम्र के 70.4% बच्चों की मौत की वजह कुपोषण थी, जबकि अभी यह 68.2% है। इस अवधि में महज 2.2% की ही कमी आई है। हालांकि 27 वर्ष पहले 1990 में एक लाख में 2336 बच्चों की मौत कुपोषण से होती थी। अब यह संख्या प्रति एक लाख पर 801 रह गई है।

इंडियन काउंसिल ऑफ मेडिकल रिसर्च (आईसीएमआर) ने देश के करीब 100 संस्थानों के विशेषज्ञों के साथ मिल कर यह अध्ययन किया है। आईसीएमआर ने अलग-अलग अध्ययन के डेटा को संग्रह करके वैज्ञानिक तरीके से यह अध्ययन किया है। इस अध्ययन को अंतरराष्ट्रीय मेडिकल जर्नल लैंसेट में प्रकाशित किया गया है।

अध्ययन के मुताबकि 1990 में पांच वर्ष की उम्र तक के 70.1% बच्चे शरीर में किसी न किसी गड़बड़ी के साथ जी रहे थे। 27 वर्ष में इसमें 3% की कमी आई है। 2017 में यह घटकर 67.1% पर आ गया है। पांच वर्ष से ऊपर के आयु वर्ग में शरीर में गड़बड़ी के साथ जीने वाले लोगों में इस अवधि में 19.2% की कमी आई है। 1990 में 36.5% ऐसे लोग थे, जो अब घटकर 17.3% रह गया है।

तेलंगाना और दिल्ली के बच्चे ज्यादा मोटे : तेलंगाना में प्रति 100 बच्चों में 23.2 बच्चे, दिल्ली में 23.1, गोवा में 22.3, राजस्थान में 10, छत्तीसगढ़ में 9.9, झारखंड में 8.6, मध्य प्रदेश में 8.2, बिहार में 6.8, हिमाचल प्रदेश में 18.5, पंजाब में 12.1, हरियाणा में 14.4, गुजरात में 13.1 और महाराष्ट्र में 14.9% बच्चे मोटापे के शिकार हैं। यह भी एक तरह का कुपोषण है।

39% बच्चों की लंबाई जन्म के समय कम होती है। उत्तर प्रदेश में 49% और सबसे कम गोवा में 21% बच्चे जरूरत से कम लंबे हैं।

60% बच्चों में खून की कमी, सबसे ज्यादा हरियाणा में 74% और सबसे कम मिजोरम में 21% में कमी।

54% महिलाओं में खून की कमी, सबसे ज्यादा हरियाणा में 65% और सबसे कम मिजोरम में 28% में कमी।

53% माताएं अपने बच्चों को छह माह तक सिर्फ स्तनपान कराती हैं सबसे ज्यादा 74% छत्तीसगढ़ में और सबसे कम 34% मेघालय में।

चिकनगुनिया

दिल्ली में एक माह में चिकनगुनिया के मरीज 17 गुना बढ़े (Amar Ujala: 20190924)

<https://www.amarujala.com/delhi-ncr/chikungunya-patients-increased-17-times-in-a-month-in-delhi?pageId=1>

चिकनगुनिया, डेंगू और मलेरिया ने अस्पतालों में मरीजों की भीड़ बढ़ा दी है

डेंगू के मरीजों की संख्या में लगभग ढाई गुना इजाफा हुआ है

लेरिया से पीड़ित तीन गुना ज्यादा लोग अस्पतालों में भर्ती हो चुके हैं

दिल्ली में मच्छरों का प्रकोप कई गुना तेज रफ्तार से बढ़ रहा है। चिकनगुनिया, डेंगू और मलेरिया ने अस्पतालों में मरीजों की भीड़ बढ़ा दी है। सोमवार को दिल्ली नगर निगम की रिपोर्ट के मुताबिक राजधानी में पिछले एक माह में चिकनगुनिया के 17 गुना ज्यादा मरीज सामने आए हैं।

इसी तरह डेंगू के मरीजों की संख्या में लगभग ढाई गुना इजाफा हुआ है। मलेरिया से पीड़ित तीन गुना ज्यादा लोग अस्पतालों में भर्ती हो चुके हैं।

नगर निगम की रिपोर्ट में यह भी खुलासा हुआ है कि इस साल डेंगू, चिकनगुनिया और मलेरिया से करीब एक हजार लोग प्रभावित हुए हैं। रिपोर्ट के अनुसार अगस्त माह में चिकनगुनिया के महज तीन मरीज सामने आए थे।

जबकि इस माह 21 सितंबर तक 52 मरीज अस्पतालों में भर्ती हो चुके हैं। इसी तरह अगस्त में मलेरिया के 56 केस दर्ज हुए थे। जबकि सितंबर माह में अब तक यह आंकड़ा 150 तक पहुंच चुका है। अगस्त माह में डेंगू के 52 केस सामने आए थे। जबकि सितंबर माह में अब तक 125 से ज्यादा लोग विभिन्न अस्पतालों में इलाज करा रहे हैं।

मच्छर जनित रोगों की रोकथाम के लिए दिल्ली सरकार 10 हफ्ते, 10 बजे, 10 मिनट का महाअभियान चला रही है। अभी तक मच्छरों से होने वाली बीमारियों पर काफी नियंत्रण होने का दावा भी किया जा रहा था, लेकिन नगर निगम की रिपोर्ट ने सरकार के दावों पर सवाल खड़े कर दिए हैं।

रिपोर्ट के अनुसार पिछले एक सप्ताह में चिकनगुनिया के 14 मामले सामने आए हैं, जिनमें से 12 मरीजों की मॉनिटरिंग करने में निगम प्रशासन फेल रहा। ठीक इसी तरह डेंगू के 46 मरीज इस सप्ताह विभिन्न अस्पतालों में पंजीकृत हुए हैं।

मरीजों में आंखों के संक्रमण की शिकायत भी

मलेरिया के मरीजों को आंखों का संक्रमण भी हो रहा है। लोकनायक, डीडीयू, डॉ. हेडगेवार, आरएमएल व एम्स सहित तमाम अस्पतालों में ऐसे मरीज देखने को मिल रहे हैं। लोकनायक अस्पताल के डॉ. महेश बताते हैं कि मलेरिया के साथ-साथ मरीजों को आंखों में संक्रमण की शिकायत भी हो रही है।

उनके यहां हर दिन 5 से 8 केस ऐसे पहुंच रहे हैं। वहीं आई-7 के डॉ. राहिल चौधरी का कहना है कि मलेरिया के अलावा आंखों के संक्रमण से जुड़े मामले भी अस्पताल पहुंच रहे हैं। मौसम में बदलाव के चलते आंखों में जलन, संक्रमण, लालपन जैसी परेशानियां आ रही हैं। इसके लिए लोगों को जागरूक रहने की जरूरत है।

मलेरिया ने पिछले साल का भी तोड़ा रिकॉर्ड

सरकारी महकमा पिछले वर्ष की तुलना करते हुए स्थिति नियंत्रण में होने का दावा करता आ रहा था, लेकिन निगम की रिपोर्ट के अनुसार पिछले वर्ष दिल्ली में सितंबर तक मलेरिया के 256 मामले अरउ थे जोकि इस साल 304 पर पहुंच चुका है। ठीक इसी तरह से चिकनगुनिया के वर्ष 2018 में सितंबर माह तक 68 केस दर्ज हुए थे, जबकि इस वर्ष 74 सामने आ चुके हैं।

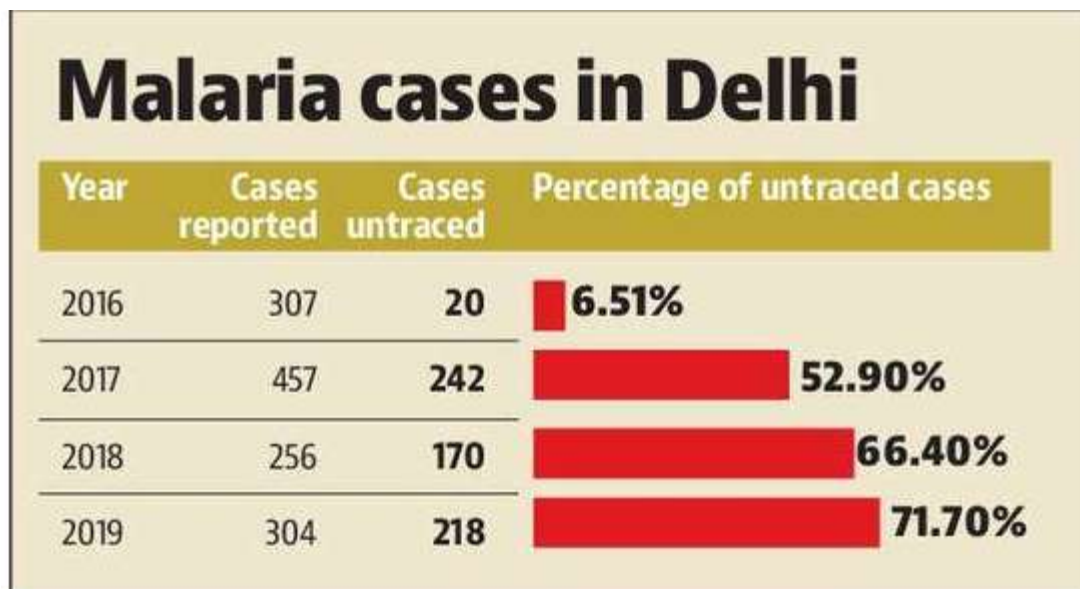
Malaria

71% malaria patients untraced for follow-up measures: North corp (Hindustan Times: 20190924)

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

New Delhi : Of over 300 cases of malaria reported among residents of Delhi, officials of the civic bodies have been unable to trace more than 71%, to take appropriate anti-vector measures.

Three hundred cases of malaria have been reported among Delhi residents, of which 150 were recorded in the first three weeks of September, according to the weekly report released by the North Municipal Corporation of Delhi on Monday.



Delhi, conventionally a state with a lower malaria count, aims to eliminate local transmission of the disease by next year. Across the country, 132,968 cases of malaria and 27 deaths have been recorded till July, according to the National Vector Borne Disease Control Programme (NVBDCP).

“Whenever a positive dengue case is reported, our officers go to the location and take a detailed history of the patient. This helps us determine whether the person actually lives there and whether they travelled somewhere during the incubation period, for usually a week or two. When we find cases from Delhi, we check about 50 to 100 houses nearby to see whether there is breeding, and spray insecticides and take measures, to prevent the infection-carrying mosquitoes from spreading it,” said Dr Ashok Rawat, district health officer, north body.

In cases where patients travel from neighbouring states to Delhi for treatment, corporation officials write to district authorities concerned to carry out vector-control measures. Another 373 such cases were reported from Delhi hospitals till September 21, according to the report.

The number of malaria cases that have gone untraced have increased over the years. In 2016, only 6.51% cases could not be traced, which increased to 52.9% in 2017, 66.4% in 2018 and 71.7% so far this year.

“There has been staff shortage in the department so far and appropriate steps were not taken to fill up the posts. Against the 97 sanctioned posts for employees who carry out such investigations, we had 14 people. Around 29 people were promoted internally a couple of months, but there is still a shortage,” said a senior official from the north body, on condition of anonymity.

To ensure that cases get traced easily, corporation officials have now asked hospitals to ensure that a working number of the patient is maintained in records.

The corporation is also in the process of making malaria a notifiable disease, meaning all hospitals — including private ones — have to report any malaria patient to the respective civic body they treat to improve the surveillance system.

“Not being able to trace patients does hamper the aim of elimination. The surveillance system needs to be galvanised to ensure that every last case can be traced,” said Dr PL Joshi, former director, NVBDCP

Healthcare

Healthy life a basic right, Prime Minister Modi tells UN meet (The Hindu: 20190924)

<https://www.thehindu.com/sci-tech/health/indias-experience-in-affordable-healthcare-is-available-for-use-to-all-developing-nations-says-modi/article29493005.ece>

Prime Minister Narendra Modi addresses the Climate Action Summit at UN headquarters on September 23, 2019.

“The first pillar is preventive healthcare. We have laid special emphasis on yoga, ayurveda and fitness,” he said.

India’s experience and capabilities in providing affordable healthcare is available for use to all developing countries, Prime Minister Narendra Modi told the first-ever high-level meeting

on Universal Health Coverage in New York on Monday, underscoring that a healthy life is the right of every person.

Addressing the meeting, Prime Minister Modi said, “Health does not simply mean freedom from diseases. A healthy life is everyone persons’ right.”

“The onus for this is on our government to make every possible effort to ensure this,” Mr. Modi said at the meeting, which will launch new efforts to provide access for all to affordable, inclusive and resilient health systems.

Mr. Modi said India’s efforts on affordable healthcare are not limited to just its own boundaries.

“We have helped to provide access to affordable healthcare by way of telemedicine to several other countries especially African countries and we will continue to do so. Our experience and our capabilities are available for use to all developing countries,” he said.

Mr. Modi began his engagements at the 74th Session of the UN General Assembly by addressing the Climate Action Summit hosted by Secretary General Antonio Guterres on Monday in the General Assembly Hall. This was followed by his speech at the Universal Health Coverage meeting.

Mr. Modi told the world leaders and ministers at the summit that the global welfare begins with people’s welfare, and health is an important component of it and added that India has taken a holistic approach towards the health sector.

He outlined the four main pillars of healthcare that India focuses on.

“The first pillar is preventive healthcare. We have laid special emphasis on yoga, ayurveda and fitness,” he said adding that India is building more than 125,000 wellness centres and this focus has helped in controlling life style diseases such as diabetes, blood pressure and depression.

Voicing concern over the harmful effects of e-cigarettes, Mr. Modi said the “craze for e-cigarettes is a matter of concern for us” due to which India has banned the commodity to “save the youth from this very severe problem”.

Further, the Clean India Campaign has contributed towards saving millions of lives and the government has also paid special attention to immunization. Apart from introducing new vaccines, the government has also improved access to vaccination in far flung areas.

The second pillar for India is affordable healthcare and under this the government has rolled out the world’s largest health insurance scheme — Ayushman Bharat. Under this scheme, 500 million poor people have been given the facility of free treatment worth up to 500,000 rupees every year and last year alone, 4.5 million people have availed of this facility.

Mr. Modi told the high-level meeting that India has opened more than 5000 special pharmacies where more than 800 varieties of vital medicines are available at affordable prices.

“The cost of stents for heart patients has been slashed by 80% and the cost of knee implants has been cut down by 50 to 70 per cent. Hundreds of thousands of kidney patients in India are also taking advantage of the free dialysis services provided by the government,”he said.

For India, the third pillar is improvements on the supply side and the government has taken several “historic steps” for quality medical education and medical infrastructure development.

Highlighting the fourth pillar of “mission mode intervention”, Mr. Modi said if mothers and children are healthy, this will lay the foundation for a healthy society.

“We have started the National Nutrition initiative in mission mode.”

While the United Nations has set a deadline of 2030 in its Sustainable Development Goals to ending the TB epidemic, Modi said the target year that India has set for itself to end TB is five years ahead of the UN deadline.

“We have set this target in mission mode in 2025. I’m fully confident that we will be able to achieve this target,” he said adding that a campaign has also been started against diseases that spread due to air pollution and through animals.

Mr. Modi ended his address with the Sanskrit saying, ‘Sarve Bhvantu Sukhin, Sarv Santu Nirmaya’ that translates into ‘wishing all happiness, wishing all a disease-free life.’

Health care for all by 2030: India at UNGA (Hindustan Times: 20190924)

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

New York : World leaders adopted a high-level United Nations Political Declaration on universal health coverage (UHC) at the opening plenary of the UN General Assembly (UNGA) high-level week that began on Monday. It is the most comprehensive set of health commitments ever adopted.

Countries, including India, made a financial and political commitment to accelerate progress towards universal health coverage by scaling up essential health services, affording financial risk protection and access to safe, quality, effective and affordable medicines and vaccines for all. “This declaration represents a landmark for global health and development. The world

has 11 years left to make good on its sustainable development goals. UHC is key to ensuring that happens,” said World Health Organisation (WHO) director-general Dr Tedros Adhanom Ghebreyesus.

This is the first UHC meeting at the UNGA, where countries meet in September in New York every year to discuss the critical issues. This is the most significant political meeting to date on the UHC, which is defined as everyone having access to the health care, when and where they need it, without facing financial hardship. “India is making commendable strides towards SDG 3 [sustainable development goals], the health goal, and the mission that underpins it in achieving UHC. Under the ambitious double-pronged Ayushman Bharat programme, India is creating 150,000 health and wellness centres to provide an expanded range of primary health services closer to communities. It covers half-a-billion people with the world’s largest health insurance scheme,” said Dr Poonam Khetrpal Singh, regional director for South-East Asia, WHO.

India’s expansion of public health programmes, such as expanding vaccination under Mission Indradhanush and sanitation services under Swachh Bharat is winning global accolades, including the Goalkeepers award from Bill & Melinda Gates Foundation. “UHC is the platform on which our health goals can be achieved to benefit all sections. India needs a well-resourced health system to deliver UHC by 2030. While there is a visible political commitment to that goal, greater investment is needed...,” said Dr Srinath Reddy, president, Public Health Foundation of India.

Air Pollution

First in pollution control: how Surat industries will trade particulate matter (The Indian Express: 20190924)

<https://indianexpress.com/article/explained/first-in-pollution-control-how-surat-industries-will-trade-particulate-matter-6022272/>

TS is a market in which the traded commodity is particulate matter emissions.

Launched in Surat, the Emissions Trading Scheme (ETS) is a regulatory tool that is aimed at reducing the pollution load in an area and at the same time minimising the cost of compliance for the industry.

Last week, the Gujarat government launched what is being described as the world's first market for trading in particulate matter emissions. While trading mechanisms for pollution control do exist in many parts of the world, none of them is for particulate matter emissions. For example, the CDM (carbon development mechanism) under the Kyoto Protocol allows trade in 'carbon credits'; the European Union's Emission Trading System is for greenhouse gas emission; and India has a scheme run by the Bureau of Energy Efficiency that enables trading in energy units.

How will the Gujarat scheme work?

Launched in Surat, the Emissions Trading Scheme (ETS) is a regulatory tool that is aimed at reducing the pollution load in an area and at the same time minimising the cost of compliance for the industry. ETS is a market in which the traded commodity is particulate matter emissions. The Gujarat Pollution Control Board (GPCB) sets a cap on the total emission load from all industries. Various industries can buy and sell the ability to emit particulate matter, by trading permits (in kilograms) under this cap. For this reason, ETS is also called a cap-and-trade market.

How many industrial units are participating in ETS?

Live trading began last Tuesday, with 88 industries taking part in the first round out of 155 that have joined ETS so far. Emission permits worth Rs 2.78 lakh were traded. These industries are from sectors including textiles, chemicals and sugar, and spread over an area of 50-30 sq km. These industries use either coal or bagasse (residue after juice is extracted from sugarcane) as fuel, thus emitting a high amount of ash. The participants were selected on the basis of the size of their chimneys — those with a diameter of 24 inches or more. "So most of the participants are larger players," said N M Tabhani, member secretary of GPCB.

Why was Surat chosen for the scheme?

In the last five years, the quality of air in Surat has deteriorated. In 2013, when the project was conceptualised, the PM10 level at Air India Building in Surat was 86 micrograms per cubic metre. According to GPCB annual reports, pollution levels have increased between 120-220 per cent, with PM10 in 2018 reaching 189 µg/cu. m at Air India Building, 282 µg/cu. m at Sachin Industrial Estate and 261 µg/cu. m at Garden Silk Mills. Surat was chosen because its industrial associations agreed to run the pilot scheme, said officials associated with the project. Also, industries in Surat had already installed Continuous Emission Monitoring Systems, which makes it possible to estimate the mass of particulate matter being released.

How does the trading take place?

At the beginning of every one-month compliance period (during which one emission permit is valid), 80 per cent of the total cap of 280 tonnes for that period is distributed free to all participant units. These permits are allocated based on an industry's emission sources (boilers, heaters, generators) as this determines the amount of particulate matter emitted. GPCB will offer the remaining 20 per cent of the permits during the first auction of the

compliance period, at a floor price of Rs 5 per kilogram. Participating units may buy and sell permits among each other during the period. The price is not allowed to cross a ceiling of Rs 100 per kilogram or fall below Rs 5 per kg, both of which may be adjusted after a review. On Tuesday, GPCB put out 55,993 permits, of which 55,614 were traded.

How are the auctions conducted?

These take place on the ETS-PM trading platform hosted by the National Commodities and Derivatives Exchange e-Markets Limited (NeML). All participants must register a trading account with NeML. Transactions are linked to the bank accounts of the users, who can view updates through these accounts.

There are two types of auctions. In the Uniform Price Auction every Tuesday between 3 and 5 pm, the week's permit price is discovered by participating members through bidding. Second, there is a continuous market between Wednesday and Monday (2 pm to 5 pm) where members will buy and sell permits whose prices were fixed on Tuesday.

For a true-up period of 2-7 days before the completion of the compliance period, units may continue to buy and sell any remaining permits at the final auction price to meet their compliance obligations.

How will ETS help reduce emissions?

“Industries in this area are emitting way above [the cap] at 362 tonnes per month. To bring them down to 280 will be a huge reduction. In the future this cap may be reduced below 280 tonnes,” said Gargi Goswami, a research associate at Abdul Latif Jameel Poverty Action Lab (J-PAL) with its global office at Massachusetts Institute of Technology, J-PAL, along with Energy Policy Institute at the University of Chicago in India, and NeML and South Gujarat Textile Processors Association are partners in the ETS project.

“These permits are not a way to allow industries to keep polluting. Purchasing permits is only an interim measure for many of these units who find it financially difficult to install air pollution control measures. In other words it helps you buy some time and make investments later. So the idea of this scheme is also to make sure that some units realise that it is cheaper to install APCM and reduce emissions rather than buy permits at a higher cost that will vary due to the bidding process,” Goswami said.

Will there be a punitive action for non-compliance?

Based on permits held by units at the close of the compliance and true-up periods, units will be declared compliant or non-compliant. An environmental damage compensation at Rs 200/kg will be imposed for emissions in excess of a unit's permit holdings at the end of the compliance period. This amount will be deducted from an environmental damage compensation deposit that each unit has to submit before the start of the scheme — Rs 2 lakh for small units, Rs 3 lakh for medium ones and Rs 10 lakh for large units. After any deduction, a unit will have to deposit extra money to meet that shortfall.

To prevent any participant from hoarding permits, an upper limit has been set — 1.5 times the initial allocation for the compliance period, or 3 per cent of the market cap for the compliance period. Also, no unit may sell more than 90 per cent of its initial allocation.



Will the recent ban on e-cigarettes make young smokers go back to tobacco? We asked a few millennials to explain the vape culture.

MALVIKA RAMESH

THE ASIAN AGE

In recent times, millennials have been constantly facing a backlash from the government. From being blamed for the low economic growth to cultural collapse in the country, the millennials have been made to feel like outcasts. Today, there is yet another way this tug of war between the youth and the Government continues to play out. The latter has passed an ordinance prohibiting the manufacturing and sale of e-cigarettes in India. The bill also states that those who continue to manufacture or sell e-cigarettes will be punished by court.

Mohammad K.C., an entrepreneur from Bengaluru, says, "I used to smoke quite a lot and after I shifted to vaping, I don't smoke cigarettes anymore. The idea of banning e-cigarettes doesn't make sense. I understand that people have faced health issues because of vaping and that a few have even died, but how many people have died vaping in comparison to those smoking cigarettes? Most of us who vape, quit smoking instantly and gradually reduce the amount we vape as well. It helps us to quit smoking altogether. Now, the only option I have is to go back to smoking cigarettes."

Assistant manager Samith Srinivas Gowda says, "I think that this ban is just a result of tobacco lobbying. If you consider health as an issue, then ban the consumption of tobacco. It's kind of frustrating, because I'm thinking about what I'll do when I run out of flavours to smoke my vape. It's just making me want to smoke a cigarette. I honestly don't know what I am going to do now that vaping is banned, I can't stand the smell of cigarettes now though, so no idea."

In a press release, Association of



I think this ban is just a result of tobacco lobbying. If you consider health as an issue, than ban the consumption of tobacco. It's kind of frustrating, because I'm thinking about what I'll do when I run out of flavours to smoke my vape.

— SAMITH SRINIVAS GOWDA, ASSISTANT MANAGER



Mohammed KC

Vapers India (AVI) has said that there are over eleven crore vapers in the country, who have gained health benefits because of switching to vaping from tobacco. This ban to them is considered to be a black day and the millennials are questioning this decision that they find absurd.

Shipping company employee Nolan Mascarenhas says, "What we need is regulations, not bans. If you do not have a way to control something, it does not mean you just completely wipe out its use. Banning has never helped anyone; we can still find ways to use the products that are banned. If the Government was really concerned about improving the health of the people, they would put regulations on the consumption of cigarettes as well as e-cigarettes."

Most of the millennials who have been vaping for over a year now, believe that it has helped them cope with the after-effects of smoking nicotine and tobacco filled cigarettes. Talking about how smoking an e-cigarette has helped and what can be an alternative now, former jockey Sreekanth Gowda says, "As someone who smokes the vape on a daily basis, this ban brings in a lot of mental stress and anxiety for us. Although, I don't think people who vape are going to stop, they'll just find illegal ways to buy it. The difference from when I used to smoke cigarettes to smoking vape is that, now I can taste food, I can interact socially without being worried about the stink and, most importantly, I have greater peace of mind about my health."

Picture of Game Of Thrones actress, Sophie Turner seen vaping. This image is used for representational purpose.



Cancer

Scientists evaluate cancer risk of US drinking water (Medical News Today: 20190924)

<https://www.medicalnewstoday.com/articles/326423.php>

Carcinogens in drinking water could be the cause of more than 100,000 cases of cancer in the United States, according to a recent study.

Is tap water safe? New research investigates.

Researchers from the Environmental Working Group (EWG) in Washington, DC, used a new approach to analyze cumulative cancer risk due to cancer-causing chemicals in tap water across the U.S.

They report the findings in a recent Helyion paper.

They note that the study is the first to apply a "cumulative cancer risk framework" to the analysis of tap water contaminants for the whole of the U.S.

The analysis drew on water quality data from 48,363 community water systems across the country.

The dataset did not include private wells, which supply drinking water to around 14% of the U.S. population, or about 13.5 million households.

The analysis revealed that the most significant impact on cancer risk came from arsenic, followed by byproducts of disinfection.

"Drinking water contains complex mixtures of contaminants, yet government agencies currently assess the health hazards of tap water pollutants one by one," says first and corresponding study author Sydney Evans, an EWG science analyst.

"In the real world," she adds, "people are exposed to combinations of chemicals, so it is important that we start to assess health impacts by looking at the combined effects of multiple pollutants."

Calculating cumulative lifetime cancer risk

In their study paper, the authors explain that since the 1990s, scientists and health organizations in the U.S. and elsewhere have been urging that risk assessments should focus on cumulative impact rather than just the effect of one contaminant at a time.

Indeed, in the U.S., it is already standard practice to use a cumulative approach to assess the risk of developing both "cancer and other serious health effects" from exposure to toxic air pollutants.

WHO publish report on microplastics in drinking water

WHO say there is an urgent need to study the health impacts of microplastics in drinking water as current knowledge is very limited.

The new study builds on a model that the state of California used to assess the cumulative cancer risk of drinking water contaminants.

The team obtained cancer risk benchmarks for each of the 22 contaminants that they analyzed from the U.S. Environmental Protection Agency and the California Office of Environmental Health Hazard Assessment (California OEHHA).

These benchmarks give the level of a contaminant that corresponds to the risk that 1 person per million of the population exposed to the contaminant could develop cancer during their lifetime. Government agencies use 70 years as the approximate statistical lifespan in the U.S.

From the average results of water quality tests that each community had conducted on their water systems during 2010-2017, the researchers could see which had exceeded the benchmark threshold for each of the contaminants.

Therefore, for each community in which the contaminant had exceeded the threshold, the estimated number of cases would be the lifetime cancer risk multiplied by the size of the population.

Building a national picture

At a national level, the estimated number of lifetime cancer cases due to a given contaminant would then be the sum of estimated cases in communities that exceeded the threshold.

In the case of arsenic, for example, the California OEHHA defines the level of contaminant that corresponds to a lifetime cancer risk of 1 case in 1 million as 0.004 micrograms per liter (mcg/l).

From the water quality and population data for each community, the researchers calculated that 141 million people across the U.S. live in areas in which levels of arsenic are above this threshold.

The calculation yields a national figure of 45,300 estimated number of lifetime cancer cases due to arsenic in drinking water.

The cumulative lifetime cancer risk is, therefore, the sum of the estimated number of lifetime cancer cases due to each contaminant.

'Need to prioritize source water protection'

"Overall," conclude the authors, "tap water exposure to the carcinogenic contaminants analyzed in this study corresponds to 105,887 estimated lifetime cancer cases."

They point out that this magnitude of cumulative cancer risk is on a par with that of cancer-causing air pollutants.

The highest risk came from water systems that rely on groundwater and supply mostly smaller communities.

However, larger surface water systems also account for a sizeable share of the overall risk, note the researchers. This is because they have a persistent presence of disinfection byproducts in them and serve more people.

"We need to prioritize source water protection," says senior study author Olga Naidenko, Ph.D., vice president for science investigations at EWG, "to make sure that these contaminants don't get into the drinking water supplies to begin with."

Important to see findings in context

Jim Smith, professor of environmental science at the University of Portsmouth in the United Kingdom, was not involved in the study.

He acknowledges that while the study tries to "model cancer risks from drinking water," it fails to explain them in their proper context. For example, it does not make any comparisons with other environmental risk factors.

"The comparison," he notes, "of carcinogenic risk from drinking water and those from air pollution fails to mention that carcinogenic risk from organic contaminants is only a very small factor in total air pollution risk."

Such a comparison could mislead people who are not familiar with these types of studies into believing that the health risks of drinking tap water are similar to those of exposure to air pollutants.

Without appropriate context, scientific results can lead to an "understandable public overreaction to risks and to wrong policy decisions," he concludes.

4 gold molecules point to the future of cancer treatment (Medical News Today: 20190924)

<https://www.medicalnewstoday.com/articles/326406.php>

Newly engineered gold based molecules look to be safer and more effective at fighting cancer than prominent platinum based therapies.

New research zooms in on four gold molecules that may change cancer treatment.

For the past few decades, platinum based cisplatin has been a compound of choice in the treatment of many cancers.

It is especially effective at halting testicular cancer, with a success rate of more than 90%.

However, the usefulness of cisplatin and other metal based cancer drugs has been limited due to their toxicity, their resistance to other drugs in a person's system, and a lack of long term stability.

Now, a study by RMIT University in Melbourne, Australia — the results of which appear in *Chemistry: A European Journal* — has announced the engineering of four gold based, bioactive molecules for use in cancer treatment.

Preclinical trials have shown these molecules to be up to 24 times as effective as cisplatin at killing some cancer cells.

They are also better at arresting tumor growth, and they are resistant to other medications, allowing them to remain effective for longer.

"Our results show there's incredible potential here for the development of new cancer fighting therapeutics that can deliver lasting power and precision."

Study co-author Neda Mirzadeh

Metallic compounds as medicine

People have known about the therapeutic benefits of metal for thousands of years.

Metals, after all, are naturally occurring elements involved in a range of cellular activities, and they are compatible with the human body — at least up to a point. Establishing the optimal safe dosage has been challenging.

Nonetheless, the ancient Egyptians and Chinese (among others) successfully used gold and copper to treat syphilis. Likewise, physicians of classical Greece dispensed cinnabar (mercury sulfide) to treat eye disease, trachoma, and other conditions.

Gold nanoparticles could destroy prostate cancer

Researchers are testing a new treatment, and the results so far are promising.

In the mid-1960s, researcher Barnett Rosenberg was conducting experiments with *Escherichia coli* bacteria when he discovered that powering up his platinum electrodes — which he ironically selected for their presumed inertness — caused cell division in his samples to abruptly stop.

He soon found the reason: a compound, called cisplatin, which the electrodes had produced.

Rosenberg's further investigation revealed cisplatin's remarkable efficacy at halting the growth of tumors in mice.

Since its eventual approval for human use in 1978, cisplatin has become an important tool in fighting cancer — both on its own and in combination with other compounds.

The 4 new molecules

The team that engineered the new molecules — RMIT's Molecular Engineering Group — brings together synthetic chemists and pharmacologists who share decades of experience at developing gold molecules for specific uses.

In this case, the researchers designed molecules that would narrowly target cancer cells without harming healthy cells.

Their molecules would also inhibit the production of thioredoxin reductase, an enzyme associated with both cancer growth and drug resistance.

In addition, the molecules have anti-inflammatory properties useful for relieving the swelling often present at tumor sites. This capability may also suggest a role for the molecules in the development of future arthritis therapies.

The researchers have completed in vitro and in vivo preclinical studies that demonstrated their molecules' cytotoxic effect on prostate, breast, cervical, melanoma, and colon cancer cells. They also slowed tumor growth in animals by as much as 46.9%, as opposed to cisplatin's 29%.

Suresh Bhargava, leader of the research group, points out the long-unsettled status of gold as a therapeutic agent.

"We know that gold is readily accepted by the human body, and we know it has been used for thousands of years in treating various conditions," he says. Still, "gold has been market tested, but not scientifically validated."

The team's quartet of new molecules changes that. "Our work is helping both provide the evidence base that's missing, as well as delivering new families of molecules that are tailor made to amplify the natural healing properties of gold."

The Molecular Engineering Group is now looking to acquire funding for its next steps: human clinical studies and regulatory approval.

Parkinson's disease

How 'exergaming' can help people with Parkinson's (Medical News Today: 20190924)

<https://www.medicalnewstoday.com/articles/326411.php>

Exercise is important for helping people with Parkinson's disease achieve better balance and mobility, but it can be hard to keep it up. A Dutch study has yielded positive results with a novel home exercise computer gaming program.

New research showcases the benefits of 'exergaming' for people living with Parkinson's.

For people with Parkinson's disease, exercise is key to good health.

The Parkinson's Outcomes Project, which is a 10 year study of 12,000 people in five countries, found that starting exercise as early as possible following diagnosis and doing at least 2.5 hours per week can slow the condition's progress.

However, which exercise is best?

Access, cost, commitment, and self-consciousness can all prove challenging to the nearly 1 million people with Parkinson's in the United States.

The Parkinson's Foundation advise stretching, along with exercises that are aerobic, strengthening, and enjoyable.

Enter the Park-in-Shape study in bicycle loving Holland. This large study, which now appears in The Lancet Neurology, used motivational apps to get people with Parkinson's moving.

One control group did stretching exercises, while the other used stationary bikes at home. The latter group showed a significant improvement in motor ability — comparable with that achieved by several conventional Parkinson's drugs.

"We conducted the study for several reasons," Nicolien van der Kolk — a Ph.D student at Radboud University Medical Center in Nijmegen, the Netherlands — explained to Medical News Today.

"Previous exercise research in people showed the beneficial effect of targeted training on improving skills, for example, walking training improved walking speed, however, it was unknown whether it could also improve symptoms that were not directly trained.

"Animal research suggested an important role for aerobic exercise in influencing [Parkinson's]. We, therefore, wanted to see what the effect of aerobic exercise was on [Parkinson's] symptoms that were not directly trained with the exercise."

The bike group, who had to cycle for 30–45 minutes three times per week for 6 months, received exercise bikes with screens and games designed to rouse their enthusiasm and motivate them to improve.

For example, they could race themselves, battling to the finish against the "ghost rider" of their previous effort, or they could take on a group of other riders — all in the comfort of their own homes.

The system, which monitored the participants' heart rate and upped the ante accordingly, became tougher as they got fitter.

'Exergame' matches medication's benefits

The study — which the Department of Neurology at the Donders Institute for Brain, Cognition, and Behaviour at Radboud University Medical Center ran — showed that those with bikes had significantly improved their motor ability compared with those who simply stretched.

In fact, the participants with bikes scored 4.2 points lower, on average, on the MDS-UPDRS score. This is a unified rating scale that measures the course of the condition.

The cyclists also showed better cardiovascular fitness:

"This study shows that by performing intensive aerobic exercise, [people with Parkinson's] can improve their cardiovascular fitness, which obviously has many health benefits and can limit comorbidity in the future."

Nicolien van der Kolk

"In addition, it shows that aerobic exercise has effects on [Parkinson's] motor signs that are similar to levodopa [a drug that aids muscle control], however with the main difference that exercise stabilizes and levodopa improves signs."

Is Parkinson's disease passed on through genetics?

We examine the genes and environmental influences in the development of this condition.

The researchers conclude that the gains to motor ability were clinically significant and showed the benefit of exercise in a treatment regimen.

Not only that, they say, but the convenience of exercising at home in a fun way — with an "exergame" — proved motivating. The participants surprised the researchers with their commitment.

A review of seven studies on the benefits of exergaming for Parkinson's, which appears in the Journal of Neuroengineering, showed that "exergaming" improved balance and motor symptoms and helped with walking. It also showed the potential of exergaming as a means to boost motor skills in people with Parkinson's.

It also helped overcome the challenges of deciding where to exercise, the cost, and commitment issues.

Van der Kolk said that most participants were happy with the motivating elements of the game.

"Some were very pleased with the support function that their family could fulfil, whereas others were mainly stimulated by the visualization of the goal on the bike's computer screen."

The researchers say that they can now start looking at the potential of an extended cycling program to slow the condition down, as well as its effectiveness for other disorders.

"Whether the brain is compensating the neurodegenerative process better, or whether it reduces or slows down the neurodegenerative process, is so far unknown. Additional research is necessary to study the effect in the brain, as well as on [Parkinson's] symptoms over a longer period of time," said van der Kolk.

Alzheimer's disease

Alzheimer's: Head device reduces memory loss in 7 out of 8 people (Medical News Today: 20190924)

<https://www.medicalnewstoday.com/articles/326401.php>

An open-label clinical trial working with eight people with Alzheimer's disease concluded that a new wearable device that emits electromagnetic impulses was able to significantly improve memory loss in seven of these participants within 2 months.

An innovative wearable device can significantly reduce memory loss in Alzheimer's disease, according to a new clinical trial.

Alzheimer's disease affects millions of people in the United States and worldwide, but as yet there is no cure for this progressive neurodegenerative condition.

The condition's main physiological characteristic is the aggregation of beta-amyloid and tau protein in the brain, which disrupt normal communication pathways between brain cells.

Scientists have been aware of this aspect of Alzheimer's for years but have so far been unable to prevent the aggregates from forming, or to dissolve them once formed — not in humans, at least.

But now, researchers affiliated with NeuroEM Therapeutics — a medical device company based in Phoenix, AZ — have developed a wearable device that, according to their recent open-label clinical trial, can significantly reduce memory loss in Alzheimer's by disaggregating toxic protein formed in the brain.

The device has the shape of a cap, and it emits electromagnetic waves in a frequency that, as preclinical studies in mice have shown, can help reverse memory loss. The research team that conducted the clinical trial reports the groundbreaking results in a study paper that appears in the *Journal of Alzheimer's Disease*.

"Despite significant efforts for nearly 20 years, stopping or reversing memory impairment in people with Alzheimer's disease has eluded researchers," notes one of the researchers, Dr. Amanda Smith, who is the director of clinical research at the University of South Florida Health's Byrd Alzheimer's Institute in Tampa.

"These results provide preliminary evidence that [transcranial electromagnetic treatment] administration we assessed in this small [Alzheimer's disease] study may have the capacity to enhance cognitive performance in patients with mild to moderate disease."

Dr. Amanda Smith

'Highly significant improvement' at 2 months

For the trial, the researchers worked with eight participants with mild to moderate Alzheimer's disease and their caretakers, who received instructions on how to use the therapeutic device at home. The participants received the treatment twice a day for 2 months, and each session lasted just 1 hour.

By the end of the 2 months, none of the participants had experienced any side effects. Brain scans conducted by the researchers at the end of the study showed that the eight individuals had not developed tumors or brain bleeding as a result of having used the device.

To assess whether the treatment had helped the participants, the investigators used The Alzheimer's Disease Assessment Scale-Cognitive Subscale test (ADAS-cog), the most widely recognized method of assessing cognitive function.

The team found that seven of the eight participants saw an increase of over 4 points in cognitive performance on the ADAS-cog scale after 2 months. This, the researchers explain, is as if the participants' cognitive function had "rejuvenated" by a year.

"We were particularly surprised that this highly significant improvement in the ADAS-cog was maintained even 2 weeks after treatment was completed," says Dr. Gary Arendash, CEO of NeuroEM Therapeutics. "The most likely explanation for continued benefit after cessation of treatment is that the Alzheimer's Disease process itself was being affected," he adds.

The researchers also collected blood and cerebrospinal fluid samples from the participants both at baseline and at the end of the clinical trial.

In analyzing them, they found that the intervention appeared to have led to the disaggregation of beta-amyloid plaques and tau tangles, which are associated with progressive cognitive function impairment in Alzheimer's.

Furthermore, MRI scans also suggested that after the 2-month treatment period, the participants had better communication between brain cells present in the cingulate cortex, which plays a key role in cognitive function — including decision making.

Further steps

The researchers behind the innovative device also note that they received the best feedback they could have received: all of the participants decided to hang onto the devices they got as part of the clinical trial.

"Perhaps the best indication that the 2 months of treatment was having a clinically important effect on the [Alzheimer's disease] patients in this study is that none of the patients wanted to return their head device to the University of South Florida/Byrd Alzheimer's Institute after the study was completed," says Dr. Arendash.

The team is particularly excited about the device's effect on toxic brain plaques. They say that drugs tested in clinical trials have, so far, been much less successful in disaggregating these disruptive buildups.

So, the investigators do not plan on stopping at this small clinical trial. Going forward, they have offered the current trial's participants' the opportunity to take part in a much larger clinical trial, which the research team is now organizing.

Can exercise slow down Alzheimer's?

Emerging evidence suggests that regular exercise could help people with Alzheimer's disease.

All the former participants have accepted this offer. The new trial is due to last around 17 months, on average, and will include about 150 participants with a diagnosis of mild to moderate Alzheimer's disease.

The medical device company hope that they will be able to gain Food and Drug Administration (FDA) approval for their technology over the next couple of years and make the device available to the public by 2021.

Bowel Cancer

Do gut bacteria affect bowel cancer development? (Medical News Today: 20190924)

<https://www.medicalnewstoday.com/articles/326404.php>

Being able to identify someone's risk of cancer is vital for saving lives. However, it is challenging to predict how likely a person is to develop a specific type. Some links are known, including the link between smoking and lung cancer, while others are yet to be discovered.

New research explores bacteria's impact on bowel cancer development.

According to several studies, bacteria living in the gut can predict the onset of bowel cancer.

Bowel cancer is the third most common cancer in the United States.

Otherwise known as colorectal cancer, it is also the third leading cause of cancer-related death for both males and females in the U.S.

However, this risk factor is not a simple one. The makeup of the gut microbiome — which refers to the trillions of microbes residing in the gut — varies from person to person.

Numerous studies have investigated if specific microbe types or combinations could lead to bowel cancer or worsen its progression.

Now, researchers from Brazil's Federal University of Viçosa have carried out a review of these studies to see if they could uncover any trends or patterns.

How microbes affect cancer development

Appearing in the *Journal of Medical Microbiology*, the team's analysis found three main ways that gut microbes can increase the risk of bowel cancer.

Lead study author Dr. Sandra dos Reis hopes to use them for the creation of new early diagnosis tools.

"New forms of prevention and treatment for certain diseases can be developed using the intestinal microbiota, since the composition of this microbiota can be changed by a number of factors, such as diet, the use of probiotics, prebiotics, and antimicrobials among others," she explains.

Their first finding relates to gut inflammation. The researchers found that bacteria within the gut capable of kickstarting an inflammatory condition can do a similar thing with cancer development.

They therefore suggest that people living with chronic gut inflammation are more susceptible to cancer.

Bowel cancer: 3-drug combo may offer alternative to chemo

Research paves the way for a new and potentially more effective treatment for bowel cancer.

The scientists also suggest that bacteria that produce toxins and carcinogens could be triggers. Certain bacteria, including *Escherichia coli*, release molecules that stick to cells lining the colon, affecting cell division and behavior. One effect can be the uncontrollable division of cells, potentially leading to cancer.

E. coli is listed as a carcinogen producing bacteria, along with *B. fragilis* and *Clostridium*. These types of microbe can produce molecules that cause cancer to develop and benign tumors to become cancerous.

One study within the review looked at a particular type of benign tumor called an adenoma. The review found that high levels of a bacterium called *Fusobacterium* resulted in a person being 3.5 times more likely to develop adenomas in the colon. If left untreated, adenomas can turn into cancer.

The study authors note that *Fusobacterium* is unlikely to be present in a healthy gut, marking it of interest for future research and diagnosis.

The importance of good bacteria

Dr. dos Reis and her team also spotted that some microbes could reduce the likelihood of cancer developing in the lower intestine and even reduce tumor growth.

Bacteria that produce butyric acid were key here, she says.

"Butyric acid may be able to inhibit tumor development through different mechanisms. Thus, when abundant in the intestinal microbiota, butyric acid producing bacteria would exert a protective effect against colorectal cancer."

Dr. Sandra dos Reis

Probiotics, or "good bacteria," can also help. "By interacting with the host and other microorganisms present in the intestinal microbiota," Dr. dos Reis explains, "these

microorganisms modulate the functioning of the whole organism through different mechanisms, contributing to intestinal and systemic health."

"Considering the importance that the gut has to maintain our health, regular consumption of probiotics can impact positively on health," she adds. Yogurt, pickles, and some types of cheese are healthy foods that contain probiotics.

These findings are just the first step of a long journey. Many more studies will be necessary before researchers can say that the link between microbes and cancer is solid, and before it is possible to use the microbiome to aid cancer diagnosis and treatment.

Diabetes

Fat mass index linked to high risk of cardiovascular diseases in diabetic people (New Kerala: 20190924)

<https://www.newkerala.com/news/read/217029/fat-mass-index-linked-to-high-risk-of-cardiovascular-diseases-in-diabetic-people.html>

Washington D.C. , Sept 23 : Fat Mass Index (FMI) - a measure of relative fat content is associated with an increased risk of cardiovascular events in diabetic people, a new study has highlighted.

Body mass index (BMI), a common measure of obesity, has been recently shown to be an imperfect metric because it does not distinguish between lean muscle mass and fat mass. When issues related to obesity are studied, suitable metrics that describe obesity accurately are extremely important.

These findings were published in the Canadian Medical Association Journal.

In the study, researchers analysed data on 10,251 adults from the ACCORD study, a randomised controlled trial in the United States looking at diabetes and cardiovascular disease (CVD).

The mean age was almost 63 years, and 62 per cent of participants were men. The researchers found that people with type 2 diabetes and higher fat mass were at increased risk of major cardiovascular events compared to people with lower fat mass.

In contrast to previous research, the protective role of lean body mass was not observed in the research population with type 2 diabetes as a whole.

"We found that the protective effect of lean body mass was observed in participants with a lean BMI of less than 16.7 kg/m²," said Dr Xinqun Hu, Departments of Cardiovascular Medicine and Emergency Medicine, The Second Xiangya Hospital, Changsha, Hunan, China.

"The increased risk of CVD in [type 2 diabetes mellitus] patients with lower BMI may be attributed to the adverse effect of lower lean body mass that overrides the positive effect of lower fat mass," Hu explained.

Vaccine

Researchers discover vaccine to treat herpes (New Kerala: 20190924)

<https://www.newkerala.com/news/read/216427/researchers-discover-vaccine-to-treat-herpes.html>

Washington DC , Sept 22 : Researchers have discovered a new vaccine which is proving to be effective in combating herpes virus.

In the study, researchers delivered the Penn-developed vaccine to 64 mice and then exposed them to genital herpes. After 28 days, 63 of the mice were found to have sterilising immunity, meaning there was no trace of herpes infection or disease after the exposure.

Similarly, 10 guinea pigs, which have responses to herpes infections that more closely resemble that of humans, were also given the vaccine and exposed to the virus.

No animal developed genital lesions and only two showed any evidence that they became infected, but the infection was not in a form that animals could transmit the virus, reported the study published in the journal, 'Science Immunology'.

"We're extremely encouraged by the substantial immunising effect our vaccine had in these animal models," said the study's principal investigator Harvey Friedman, MD, a professor of Infectious Diseases.

"Based on these results, it is our hope that this vaccine could be translated into human studies to test both the safety and efficacy of our approach," added Friedman.

Building on the approaches of much cutting-edge cancer and immunotherapy researchers, the Penn team filled their vaccine with specific messenger RNA (mRNA), which can create proteins necessary for a strong immune response.

This vaccine stimulates three types of antibodies one that blocks the herpes virus from entering cells, and two others that ensure the virus doesn't "turn off" innate immune system protective functions.

This approach differs from other herpes vaccines, which often only rely on blocking the virus's entry as the mode to attack the virus.

Genital herpes also called Herpes simplex virus type 2 or HSV-2 is the most common sexually-transmitted disease. Approximately 14 per cent of Americans ages 14 to 59, and 11 per cent of people in the same age range across the world are infected. HSV-2 may lead to painful sores, which can spread to other areas of the body.

The virus increases one's risk of contracting HIV and infected pregnant women may pass herpes onto their fetus, or more commonly, to their baby during delivery.

"Along with physical symptoms, HSV-2 takes an emotional toll," said Friedman. "People worry over the transmission of the disease, and it can certainly have a negative effect on intimate relationships."

Since herpes is so widespread but also often undetected, as it is only visible during an outbreak, researchers say a successful vaccine would be invaluable to many adults across the world.