



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20210907

कोरोना

कोरोना पर डबल अटैक: नए केसों में बड़ी गिरावट, एक्टिव मामले 4 लाख से कम; एक दिन में लगे 1.13 करोड़ से ज्यादा टीके (Hindustan: 20210907)

<https://www.livehindustan.com/national/story-coronavirus-cases-fell-below-32000-and-active-case-goes-down-to-4-lakh-4530664.html>

कोरोना वायरस पर बीते 24 घंटों में भारत ने डबल अटैक किया है। एक तरफ देश में 1.13 करोड़ लोगों को महाअभियान के तहत कोरोना वैक्सीन लगी है तो वहीं दूसरी तरफ नए केसों में भी बड़ी गिरावट देखने को मिली है। बीते एक दिन में 31,222 नए केस ही सामने आए हैं, जो पहले के आंकड़ों के मुकाबले काफी कम हैं। इससे पहले सोमवार को भी 40 हजार से कम केस मिले थे। बीते करीब एक सप्ताह तक 40 हजार से ज्यादा नए मामले मिलने के बाद इस कमी ने बड़ी राहत दी है। इसके अलावा एक्टिव केसों की संख्या में भी दोबारा कमी आने लगी है।

एक्टिव केसों का आंकड़ा जो 4 लाख के पार पहुंच गया था, वह एक बार फिर से कम होते हुए 3,92,864 हो गया है। इसके अलावा रिकवरी रेट अब 97.48% हो गया है। कुल मामलों के मुकाबले एक्टिव केसों का प्रतिशत देखें तो यह अब 1.19% ही है। नए केसों में गिरावट के साथ ही रिकवरी रेट भी बेहतर रहा है। बीते एक दिन में 42,942 लोगों ने कोरोना को मात दी है। इस तरह 24 घंटे में ही एक्टिव केसों की संख्या में 11 हजार से ज्यादा की कमी आई है। अब तक देश में 3,22,24,937 लोग कोरोना संक्रमण को मात दे चुके हैं।

टीकाकरण से पड़ेगी तीसरी लहर पर मार, पहले जैसी घातक नहीं होगी?

कोरोना से जंग में सबसे अहम टीकाकरण को माना जा रहा है और भारत ने उस दिशा में तेजी से कदम बढ़ाए हैं। बीते 11 दिनों में तीसरी बार एक दिन में 1 करोड़ से ज्यादा टीके लगे हैं। इसके साथ ही अब तक कुल टीकाकरण का आंकड़ा 70 करोड़ के करीब पहुंच चुका है। यही नहीं हिमाचल, सिक्किम और दादर एवं नागर हवेली जैसे राज्यों में तो पूरी वयस्क आबादी को वैक्सीन की कम से कम एक डोज लग चुकी है। यूपी, मध्य प्रदेश जैसे बड़े राज्यों में भी तेजी से टीकाकरण जारी है। ऐसे में माना जा रहा है कि तीसरी लहर यदि आती भी है तो उसका पहले जैसा असर नहीं होगा।

निपाह वायरस

बाल- बाल बचे: निपाह वायरस से दम तोड़ने वाले बच्चे के संपर्क में आए 8 लोगों की रिपोर्ट निगेटिव (Hindustan: 20210907)

<https://www.livehindustan.com/national/story-8-people-who-came-in-contact-with-a-child-who-died-of-nipah-virus-got-their-reports-negative-4530811.html>

हाल ही में केरल को कोझिकोड में निपाह से संक्रमित होकर मौत का शिकार हुए 12 वर्षीय बच्चे के नजदीक संपर्क में आए 8 लोगों की रिपोर्ट निगेटिव आई है। राज्य की स्वास्थ्य मंत्री वीना जॉर्ज ने ये जानकारी दी है। हालांकि, साथ ही उन्होंने बताया कि नेशनल इंस्टीट्यूट ऑफ वायरोलॉजी से बाकी के पांच सैंपल्स के नतीजे आना अभी बाकी हैं।

जॉर्ज ने कहा- यह हमारे लिए एक बड़ी राहत है। जिनकी रिपोर्ट निगेटिव आई है उनमें लड़के के माता-पिता और चिकित्सा अधिकारी हैं। जैसा कि हमने 2018 में किया था, हम वायरस को ट्रैक करेंगे और प्रकोप को नियंत्रित करेंगे। बता दें कि कोझिकोड ने तीन साल में दूसरी बार निपाह संक्रमण की सूचना दी है - 2018 में इस वायरस ने जिले में 17 लोगों की जान ले ली।

मंत्री ने कहा कि स्वास्थ्य विभाग वायरस से मरने वाले लड़के के सभी 251 संपर्कों पर नजर रख रहा है। उनमें से 54 हाई रिस्क की कैटेगरी में हैं। सरकार ने नए खतरे को देखते हुए कोझीकोड और इसके बाहरी इलाके में चल रहे कोविड-19 टीकाकरण अभियान को भी स्थगित कर दिया था।

उन्होंने कहा "संक्रमण के स्रोत का पता लगाने के प्रयास जारी हैं। विशेषज्ञों ने लड़के के घर से आधा खाया हुआ रामबूटन फल बरामद किया है। उन्हें घर के पास एक फ्रूट बैट का आवास भी मिला है। भोपाल से राष्ट्रीय उच्च सुरक्षा पशु रोग प्रयोगशाला संस्थान की एक टीम जल्द ही शहर में होगी। फलों के चमगादड़ को वायरस का मुख्य वाहक और भंडार माना जाता है।"

निपाह वायरस के कहर से केरल सरकार सतर्क, आज से घर-घर जाकर होगी जांच; कर्नाटक में भी अलर्ट जारी (Dainik Jagran: 20210907)

https://www.jagran.com/news/national-kerala-government-alert-from-the-havoc-of-nipah-virus-door-to-door-surveillance-will-be-done-from-today-21998476.html?itm_source=website&itm_medium=homepage&itm_campaign=p1_component

निपाह वायरस जानवरों के जरिए इंसानों में बड़ी तेजी से फैलता है। यह एक वायरल संक्रमण है जिसका परिणाम काफी गंभीर हो सकता है। इससे बचने के लिए फिलहाल कोई इलाज देश में मौजूद नहीं है। ऐसे में इससे बचने के लिए सावधानी ही एकमात्र उपाय है।

तिरुअनंतपुरम, एएनआइ। कोरोना वायरस के बाद केरल निपाह वायरस के कहर से जूझ रहा है। इससे निपटने के लिए राज्य सरकार काफी सतर्क हो गई है। केरल की स्वास्थ्य मंत्री वीना जार्ज ने बताया कि आठ लोगों के 24 सैंपल टेस्टिंग के लिए पुणे स्थित नेशनल इंस्टीट्यूट आफ वायरोलाजी को भेजे गए हैं। उन्होंने बताया कि अब और सैंपलों की जांच की जा रही है। उन्होंने कहा कि हमने फील्ड सर्विलांस शुरू कर दिया है और आज से कंटेनमेंट जोन में घर-घर जाकर लोगों की जांच की जाएगी। बता दें कि कोझीकोड में पिछले दिनों निपाह वायरस के कारण एक 12 वर्षीय बच्चे की मौत हो गई थी, जिसके बाद राज्य सरकार काफी सतर्क हो गई है।

कर्नाटक के दक्षिण कन्नड़ में भी अलर्ट जारी

केरल में निपाह वायरस के कहर को देखते हुए कर्नाटक के दक्षिण कन्नड़ जिले में भी अलर्ट जारी कर दिया गया है। जिले के डिप्टी कमिश्नर केवी राजेंद्र ने अलर्ट जारी करते हुए लोगों से सावधानी बरतने को कहा है और स्वास्थ्य विभाग से एहतियाती उपाय करने के निर्देश दिए हैं। उन्होंने कहा कि दक्षिण कन्नड़ की सीमा केरल से लगती है और यहां से काफी लोग नौकरी और शिक्षा के लिए आते हैं।

सावधानी ही बचाव

बता दें कि निपाह वायरस जानवरों के जरिए इंसानों में बड़ी तेजी से फैलता है। यह एक वायरल संक्रमण है जिसका परिणाम काफी गंभीर हो सकता है। इससे बचने के लिए फिलहाल कोई इलाज देश में मौजूद नहीं है। ऐसे में इससे बचने के लिए सावधानी ही एकमात्र उपाय है। इसकी वैक्सीन बनाने के लिए दुनियाभर के वैज्ञानिक कड़ी मेहनत कर रहे हैं।

Day after Kerala Nipah death: 251 contacts isolated, 11 with symptoms (The Indian Express: 20210907)

<https://indianexpress.com/article/india/day-after-kerala-nipah-death-251-contacts-isolated-11-with-symptoms-7493129/>

The government has sounded an alert in Kozhikode and nearby districts of Malappuram and Kannur. Health Minister Veena George said to ensure that none of the boy's contacts is left out, a door-to-door survey will be conducted in the area which has been declared a containment zone.

A day after a 12-year-old boy in Kozhikode succumbed to Nipah virus disease, 251 persons in the victim's contact list have been isolated and a habitat of fruit bats — considered a reservoir of the zoonotic virus — has been found in the victim's locality. The source of infection remains unclear.

The government has sounded an alert in Kozhikode and nearby districts of Malappuram and Kannur. Health Minister Veena George said to ensure that none of the boy's contacts is left out, a door-to-door survey will be conducted in the area which has been declared a containment zone.

After a review meeting, the health minister told the media in Kozhikode that of the 251 persons quarantined, 11 have developed symptoms of the infection. “However, all of them, including those who had exhibited symptoms from Sunday, are stable. Results of the samples of eight persons are awaited from NIV-Pune. Of the 251 persons... 129 are health workers... among the 54 persons in the category of high risk, 30 are health workers,” said the minister.

A team of the state animal husbandry department collected samples of fruit bats from the victim’s village Chathamangalam. “The family of the victim had stated about the frequent presence of fruit bats at their property, where there are rambutan trees. Samples of half-eaten rambutan fruits, which could be either bitten by bats or pecked by birds, were collected. Besides, a habitat of fruit bats has been spotted at the other side of a river near the victim’s house. Blood samples and throat swabs were taken from sheep reared by the victim’s family. Team of experts from NIV-Bhopal would soon visit the location to collect the samples of bats for analysis,” said the minister.

The minister said teams of trained personnel will carry out a door-to-door survey, each assigned 25 houses.

Veena George said that facilities for point-of-care (TrueNat) and RT PCR tests would be arranged at Kozhikode government medical college, with the help of experts from NIV-Pune. The facility is expected to become operational on Tuesday. However, samples would continue to be sent to NIV-Pune for final confirmation, she said.

Nipah, a highly pathogenic paramyxovirus (The Hindu: 20210907)

<https://www.thehindu.com/sci-tech/health/explained-nipah-a-highly-pathogenic-paramyxovirus-and-handling-it-requires-the-highest-grade-facilities/article36318910.ece>

The virus takes from 6-21 days to incubate and manifest as disease

The natural reservoir for the virus are large fruit bats of Pteropus genus. From here, it may pass on to pigs who may be infected after eating fruits that are bitten on by infected bats.

STORY SO FAR: Kerala has reported a fatality from a case of infection by the Nipah virus in the northern district of Kozhikode bringing back memories of the chaos in May-June 2018 when the same district reported 18 confirmed cases of which there were 17 laboratory-confirmed deaths. It’s the high mortality associated with the virus that triggered panic across the State and the country and when it was controlled the State’s healthcare surveillance

system came in for praise though, as it turned out, it was only a test-run for the pandemic of 2020.

What do we know about Nipah virus outbreaks?

The human Nipah virus, as it is called, is classified as an “emerging zoonotic disease”, meaning that it can transfer to people after being incubated in other species. It was first recognised in a large outbreak of 276 cases in Malaysia and Singapore from September 1998-1999.

Prior to the Kerala outbreak of 2018, there have been several Nipah virus outbreaks in Bangladesh with spillovers into India particularly in 2001 and 2007 at Siliguri and Nadia in West Bengal. During the outbreak in Siliguri, 33 health workers and hospital visitors became ill after exposure to patients hospitalised with Nipah virus illness. At least 70 people died in the outbreaks in these two districts. In the 2018 outbreak in Kerala, four from the family of the first person confirmed with the infection succumbed to the viral disease.

How does the Nipah virus originate and spread?

Nipah virus (NiV) is classified as a “highly pathogenic paramyxovirus” and handling the virus requires the highest grade of facilities called BS-4. The natural reservoir for the virus are large fruit bats of Pteropus genus. From here the virus may pass on to pigs who may be infected after eating fruits that are bitten on by infected bats.

The initial outbreaks were reported among pig breeders whereas in Bangladesh the virus was suspected to have jumped to humans who directly consumed fruits that may have been contaminated by bat saliva or urine. The virus takes from 6-21 days to incubate and manifest as disease.

Drinking of raw date palm sap contaminated with NiV and close physical contact with Nipah-infected patients are believed to be the two main modes of spread. The person-to person transmission may occur from close physical contact, especially by contact with body fluids.

Unlike in the case of the novel coronavirus which is more airborne and can spread among great distances, the Nipah virus isn't a very efficient spreader. Contact with body fluids and an infected person's respiratory droplets, that aren't expected to travel very far, are said to be the main sources of spread which explains why close family members in a house are said to be at highest risk along with the infection spreading in hospital settings between patients.

What are the symptoms of the disease and how is it diagnosed?

Fever, delirium, severe weakness, headache, respiratory distress, cough, vomiting, muscle pain, convulsion, diarrhoea are the main associated symptoms. In infected people, Nipah virus causes severe illness characterised by inflammation of the brain (encephalitis) or respiratory diseases which is why it is associated with a high fatality rate. Because of the lethality of the virus, very few labs such as the Pune-based National Institute of Virology are equipped to confirm it by isolating the virus.

Antibody tests that detect the presence of antibodies in the serum of cerebrospinal fluid can be used to detect infection or the RNA of the virus can be detected from respiratory secretions, urine or cerebrospinal fluid.

What treatment exists?

Currently there is no known treatment or vaccine available for either people or animals. Ribavirin, an antiviral may have a role in reducing mortality among patients with encephalitis caused by Nipah virus disease, according to a fact sheet by the National Centre for Disease Control.

The thrust of treatment relies on managing symptoms.

There are, however, immunotherapeutic treatments (monoclonal antibody therapies) that are currently under development and evaluation for treatment of NiV infections. One such monoclonal antibody, m102.4, has completed phase 1 clinical trials and has been used on a compassionate use basis. In addition, the antiviral treatment remdesivir has been effective in nonhuman primates when given as post-exposure prophylaxis, according to the U.S. Centres for Disease Control. There are no approved vaccines or even test-vaccines as part of human trials for the virus.

अध्ययन: फाइजर टीके का असर छह माह में कम हुआ

वाशिंगटन | एजेसी

फाइजर टीके की खुराक लेने के बाद ही छह महीने में इसका असर कम होने लगता है। एक अध्ययन में पाया गया कि खुराक लेने के छह महीने बाद ही लोगों में 80 फीसदी कम एंटीबॉडी पाई गई।

अमेरिका के केस वेस्टर्न रिजर्व यूनिवर्सिटी और ब्राउन यूनिवर्सिटी के अध्ययन में नर्सिंग होम के 120 निवासियों और 92 स्वास्थ्य देखभाल कर्मचारियों के खून के नमूनों का परीक्षण किया गया। अध्ययनकर्ताओं ने विशेष रूप से ह्यूमोरलर इम्युनिटी को देखा जिसे एंटीबॉडी-मध्यस्थता प्रतिरक्षा भी

तीसरी बार एक करोड़ को टीका

केंद्रीय स्वास्थ्य मंत्रालय के अनुसार, देश में सोमवार को 11 दिनों में तीसरी बार एक करोड़ से अधिक को टीका लगाया गया। अब तक 69.68 करोड़ को टीका लग चुका है। > पेज 15

कहा जाता है ताकि सार्स-सीओवी-2 वायरस के खिलाफ शरीर की सुरक्षा को मापा जा सके जिससे कोविड-19 होता है। केस वेस्टर्न रिजर्व यूनिवर्सिटी के प्रोफेसर डेविड कैनेडे ने कहा कि शोध के नतीजे सीडीसी की बूस्टर खुराक लेने की सिफारिश का समर्थन करते हैं।

हाई ब्लड शुगर

सावधान: कहीं आपको भी तो नहीं है हाई ब्लड शुगर की समस्या? इन अंगों पर पड़ सकता है बुरा असर (Amar Ujala: 20210907)

<https://www.amarujala.com/photo-gallery/lifestyle/fitness/high-blood-sugar-levels-may-damage-many-parts-of-body?pageId=5>

मधुमेह दुनियाभर में तेजी से बढ़ती स्वास्थ्य समस्याओं में से एक है। आंकड़ों पर नजर डालें तो भारत में 77 मिलियन (7.7 करोड़) से अधिक लोग इस गंभीर रोग के शिकार हैं। शोधकर्ताओं का अनुमान है कि साल 2045 तक यह आंकड़ा बढ़कर 134 मिलियन (13.4 करोड़) से अधिक का हो सकता है। स्वास्थ्य विशेषज्ञों के मुताबिक मधुमेह की समस्या लोगों में मुख्यरूप से दो प्रकार की होती है- टाइप-1 डायबिटीज और टाइप-2 डायबिटीज। हाल के वर्षों में गर्भकालीन डायबिटीज की समस्या भी काफी तेजी से बढ़ती हुई देखी गई है। ब्लड शुगर की इस गंभीर समस्या से बचाव के लिए लोग तमाम प्रकार के उपाय और दवाइयों का प्रयोग करते हैं, हालांकि यह समस्या आमतौर पर पूरी तरह से ठीक नहीं हो पाती है।

स्वास्थ्य विशेषज्ञों की मानें तो डायबिटीज एक गंभीर स्वास्थ्य की समस्या होने के साथ शरीर के कई अन्य अंगों के लिए गंभीर क्षति का कारण भी बन सकती है। असामान्य रूप से ब्लड शुगर की मात्रा बढ़ जाने की समस्या को हाइपरग्लेसेमिया के रूप में जाना जाता है, यह स्थिति शरीर के लिए बेहद गंभीर हो सकती है। हाइपरग्लेसेमिया कई अंगों को क्षति पहुंचा सकती है, आइए आगे की स्लाइडों में इस बारे में विस्तार से जानते हैं।

आंखों की हो सकती है परेशानी

हाइपरग्लेसेमिया की स्थिति वाले लोगों में दृष्टि से संबंधी विकार होने का खतरा सबसे अधिक होता है। रक्त शर्करा का स्तर असामान्य रूप से बढ़ जाने पर रोगियों को धुंधली दृष्टि, मोतियाबिंद, ग्लूकोमा और आंखों से संबंधित अन्य समस्याएं हो सकती हैं। इन परेशानियों से बचे रहने के लिए डायबिटीज के रोगियों को संतुलित और पौष्टिक आहार के साथ नियमित रूप से व्यायाम करने की सलाह दी जाती है।

डायबिटिक फुट की समस्या

मधुमेह के रोगियों में ब्लड शुगर की बढ़ी हुई मात्रा पैर से संबंधित जटिलताओं को बढ़ा सकती है। सामान्य तौर पर रोगियों को डायबिटिक फुट की समस्या हो सकती है। इस स्थिति में पैर की उंगलियों में कालापन और घाव हो सकता है। अनुपचारित रहने की स्थिति में यह समस्या बढ़ते हुए पूरे पैर में फैल सकती है। इस स्थिति में रोगियों को ब्लड शुगर के स्तर को नियंत्रित रखने के प्रयास करने चाहिए।

घावों का जल्दी न ठीक होना

मधुमेह के रोगियों में घावों के समय पर ठीक न होने की समस्या सबसे आम रहती है, हाइपरग्लेसेमिया की स्थिति में जटिलताएं और अधिक हो सकती हैं। स्वास्थ्य विशेषज्ञों के मुताबिक हाइपरग्लेसेमिया, प्रतिरक्षा प्रणाली को भी प्रभावित करती है, जिसके कारण घावों को ठीक करने के लिए शरीर की प्रतिक्रिया धीमी हो जाती है। ब्लड शुगर की स्थिति बहुत अधिक बढ़ जाने पर घावों को ठीक होने में कई बार महीनों लग सकते हैं।

संक्रमण का बढ़ जाता है खतरा

हाइपरग्लेसेमिया की स्थिति के कारण रोगियों में संक्रमण होने का खतरा अन्य लोगों के मुकाबले काफी अधिक हो जाता है। ऐसे रोगियों में पेशाब के संक्रमण का खतरा अधिक होता है जो किडनी की गंभीर समस्याओं का कारण बन सकता है। हाइपरग्लेसेमिया के कारण होने वाले संक्रमणों के परिणामस्वरूप शरीर में एक स्ट्रेस रिस्पांस हो सकती है जिसके कारण कोर्टिसोल और एड्रेनालाईन हार्मोन स्राव बढ़ जाता है। यह हार्मोन इंसुलिन रेजिस्टेंस होते हैं जिसके कारण शरीर में ग्लूकोज का स्तर बढ़ जाता है। हाइपरग्लेसेमिया के कारण कोरोना का खतरा भी बढ़ जाता है।

HIV Vaccine

Explained: Why Moderna's mRNA candidate brings new hope for an HIV vaccine (The Indian Express: 20210907)

<https://indianexpress.com/article/explained/why-modernas-mrna-candidate-brings-new-hope-for-an-hiv-vaccine-7493063/>

The US pharmaceutical and biotech company Moderna, which rolled out the world's first Covid-19 vaccine, recently announced human trials for two HIV vaccines.

Forty years since the HIV global epidemic began, new hope has arisen in the hunt for the so-far-elusive vaccine. The US pharmaceutical and biotech company Moderna, which rolled out the world's first Covid-19 vaccine, recently announced human trials for two HIV vaccines. These are based on the same platform — mRNA — as Moderna's Covid vaccine.

The human trials

Moderna will be trialling two versions of its vaccine candidate. This is the first mRNA vaccine against HIV to be trialled in humans. According to the US National Institutes of Health's (NIH) clinical trials registry, 56 HIV-negative people between the ages of 18-50 have been recruited in the phase-1 trial.

There will be four groups in the first phase, with two receiving a mix of the mRNA vaccine versions and two receiving one or the other. The trial is not blind: Participants will know which group they are in.

The two mRNA vaccines will eventually be used alongside another vaccine, developed by the International AIDS Vaccine Initiative (IAVI) and Scripps Research.

The hypothesis is that the two Moderna vaccines have the potential to prime a specific type of B-Cell to produce effective neutralising antibodies, and the other vaccine will stimulate them to do so. The study sponsored by IAVI and others is expected to run until May 2023, with the first phase lasting around 10 months.

HIV burden

HIV has claimed 36.3 million lives so far, according to the World Health Organization (WHO). There were an estimated 37.7 million living with HIV at the end of 2020.

There is still no cure. However, with increasing access to effective prevention, diagnosis and care, including for opportunistic infections, HIV infection has become a manageable chronic health condition in recent years.

According to the National AIDS Control Organization's India HIV Estimation 2019 report, there were an estimated 23.48 lakh people living with HIV in 2019. Overall, the estimated adult (15-49) HIV prevalence trend has been declining in India since the peak in 2000, and has been stabilising in recent years.

The elusive vaccine

HIV tends to change its envelope so rapidly that it is difficult to provide any antibody cover. Additionally, the envelope proteins are covered by a sugar coating that affects generation of an immune response. said Dr R R Gangakhedkar, former director of National AIDS Research Institute, and former Head, Division of the Epidemiology and Communicable Diseases division of Indian Council of Medical Research (ICMR).

“An anti-HIV vaccine has been a challenge given the fact that it is a fast replicating virus and tends to mutate rapidly... Escape mutants are generated rapidly due to the high replication rate of HIV,” said Gangakhedkar, who is also a C G Pandit national chair, ICMR.

Even when antibodies are made, by the time they are produced, the virus rapidly evolves and the antibodies do not neutralise the virus. This rapid mutation allows the virus to escape the antibody response, said leading vaccine scientist Dr Gagandeep Kang. For example, the virus sequences of an untreated individual with HIV tested three months apart would show differences between the later and earlier viruses, she said.

Also in Explained |A new Nipah outbreak in Kerala, and how the lessons from Covid-19 might help in its containment

Previous attempts

Dr Kang said previously inactivated forms of the virus and adenovirus vector-based vaccines have been tried, but have not worked. A handful of HIV clinical trials were very carefully set up and conducted, but were halted either for futility when vaccines did not work, or in the case of adenovirus vectored vaccine where there was a signal that participants were more susceptible to HIV, instead of being protected, she said.

“The most important challenges in HIV vaccine development has been the inability to identify the exact correlates of immune response that need to be stimulated to protect against HIV and the enormous diversity potential of the virus. Inducing broadly neutralising antibodies against HIV envelope protein and CD8 T cell responses has been the major focus,” said Dr Sanjay Pujari, infectious diseases consultant and expert member of the national Covid 19 task force.

mRNA: way forward

The Moderna trial is different as it allows one to use technology to design and develop a vaccine really fast, Dr Kang said. It is similar to the Covid-19 vaccine development work so that the body's cells can produce the virus's spike envelope to trigger an immune response.

In the HIV context, the mRNA platform has shown promising results in vitro and monkey studies, and it would be useful to test it in human clinical trials, Dr Pujari said. The hope is that this platform has the ability to tweak the RNA to address emerging variants and their potential to escape immune response. “Until now the major challenge for the development of mRNA vaccines was lack of efficient delivery technologies. This has been overcome successfully with Covid-19 mRNA vaccines,” Dr Pujari said.

Preventive & therapeutic

Experts say two approaches can be considered for an HIV vaccine — a preventive and therapeutic one.

A preventive approach would have to check how many vaccinated people develop HIV post-vaccination, or whether the vaccinated ones can resist infection. A therapeutic approach would result in an immune response that would attack the infected cells and prevent further replication, Dr Kang said.

Therapeutic vaccines have been tried without success to achieve a functional cure. It would be interesting to study the performance of the mRNA platform in this context, Dr Pujari said.

For a therapeutic vaccine to work, it has to stimulate cells to generate broadly neutralising antibodies, Dr Gangakhedkar said. “While antiretroviral therapy controls the infection, one has to take drugs lifelong and there are side effects. A curative modality with a therapeutic vaccine and medicine can cure HIV. However, this has to be tested over a period of time, to assess whether the immune response is sustained,” Dr Gangakhedkar.

With HIV incidence having gone down, it reduces the risk of exposure to HIV. Moreover, use of other preventive measures adds to reduction in HIV incidence. These factors pose challenges in undertaking these trials and finding out whether or not the vaccine producing broadly neutralising antibodies actually prevents HIV infection, Dr Gangakhedkar said.

Prostate Cancer

Prostate Cancer Awareness Month: Seven tips to prevent the disease (The Indian Express: 20210907)

<https://indianexpress.com/article/lifestyle/health/prostate-cancer-awareness-month-seven-tips-to-prevent-the-disease-7491659/>

Early detection of prostate cancer can increase the chances of recovery

Prostate Cancer Awareness Month, what is prostate cancer, prostate cancer prevention, prostate cancer and health, what is prostate, indian express news Visit the doctor for a screening to detect early signs and symptoms. (Photo: Getty/Thinkstock)

September is considered to be Prostate Cancer Awareness Month. An important time, then, to remember to get tested. According to the Indian Medical Council of Research, prostate cancer is one of the most prevalent cancers among males.

Dr Shalabh Agrawal, urologist at CK Birla Hospital, Gurgaon says the prostate is part of the male reproductive organ which is in front of the rectum. Its function is to secrete a fluid that nourishes and protects the sperm.

“A lot of times, prostate cancer is ignored because the symptoms include difficulty in passing urine, burning sensation while urinating and increased frequency of urine. Patients do not take notice of these symptoms as they are a normal part of ageing,” he says.

The doctor says it is important to follow some tips to prevent prostate cancer. Read on.

1. Consuming foods that have lycopene

Lycopene is an antioxidant found in foods that are red in colour. Tomatoes are rich in lycopene. Multiple studies show that lycopene prevents damage to DNA as it reduces the free radicals formation.

2. Staying active

Staying fit and in shape can reduce the risk of prostate cancer. Exercises like jogging, running, cycling and swimming are not only advantageous for physical fitness, but can also lower the risk of prostate cancer. Research has shown that physical activity can reverse and prevent the risk of cancer development.

3. Being sexually active

Few studies show a direct relationship between the frequency of ejaculation and prostate cancer. Men who ejaculate more have fewer chances of developing prostate cancer — 21 ejaculations per month were found to be enough to reduce the risk of prostate cancer in men

aged 20-25. Semen accumulation can increase prostate cancer risk by disrupting prostate function.

Prostate Cancer Awareness Month, what is prostate cancer, prostate cancer prevention, prostate cancer and health, what is prostate, indian express news Prostate cancer's symptoms include difficulty in passing urine, burning sensation while urinating and increased frequency of urine. (Photo: Getty/Thinkstock)

4. Ensuring a healthy diet with optimal fats

Consuming foods rich in healthy fats like avocados, olive oil, almonds and walnuts are beneficial in the prevention of prostate cancer. Replacing animal fats with plant-based fats can give added benefits as animal proteins are linked with an increased risk of prostate cancer.

5. Eating food that contains Isoflavones

Isoflavones are found in foods like soybeans, peas, lentils and tofu. The prevalence of prostate cancer was found to be low in men of Asian origin as their intake for isoflavones is higher.

6. Avoiding smoking

Smoking is linked to recurrence of diseases. Patients who smoke frequently are more severely impacted than patients who don't smoke. A study suggests that people with prostate cancer who quit smoking lived almost a decade more than the people who smoke regularly.

7. Consulting a doctor

Early detection of prostate cancer can increase the chances of recovery. Visit the doctor for a screening to detect early signs and symptoms. Details like family history of cancer are also important. Besides these, difficulties in urination and bleeding while urination can be a sign to get yourself checked.

Urinary Tract Infection

How to prevent UTI among children during the monsoon season (The Indian Express: 20210907)

<https://indianexpress.com/article/parenting/health-fitness/how-to-prevent-uti-among-children-during-the-monsoon-season-7492418/>

A UTI can very quickly become a kidney problem if not caught early and treated.

One of the infections that children get during this season is urinary tract infection. This is common due to the moisture present within the air and if privates are not taken care of.

The monsoon season can bring many other things with it apart from the rains and a pleasant breeze. It brings mosquitoes and tons of fungal and other infections alongside it. Children have to be protected against these infections before they turn dangerous in no time. The rapid change in weather from hot and dry to sultry can decrease the immunity of youngsters.

One of the infections that children get during this season is urinary tract infection. This is common due to the moisture present within the air and if privates are not taken care of one can get a tract infection. It has been known that children pass urine far more frequently than adults as they need a smaller bladder. A UTI can very quickly become a kidney problem if not caught early and treated.

Symptoms of Urinary Tract Infection (UTI):

- Blood in the urine
- Smelly urine
- A burning feeling while urinating.
- Very dark or cloudy urine
- Notice a rise in frequency to urinate.

Untreated UTI, which has spread to the kidney, can have these symptoms:

- Nausea and vomiting throughout the day.
- Pain in the lumbar
- Fever

Children might get a tract infection if they do not sanitise their privates properly after visiting the washroom. The unidentified UTI can very quickly spread to the kidneys. There are two sorts of tract infections, which are cystitis and pyelonephritis. It is called cystitis when it

impacts the bladder of the kid, and pyelonephritis when the infection impacts the kidneys. These infections can simply be treated with a dose of antibiotics. Never self-diagnose your child because it can cause other complications. Parents must take care of it so that the child has his or her medication timely and completes an antibiotic dose. If not diagnosed and treated timely the tract infection can become very dangerous very quickly and may impact your child's kidneys.

How to prevent urinary tract infection:

Keep your kids well hydrated. Drink at least 7 – 8 glasses of water throughout the day. Fluids like fruit juices, soups can also be helpful.

Catheterise frequently using a good clean technique. If the child keeps the bladder empty of urine it will help prevent infections.

Prevent constipation. A huge amount of stools in the rectum can keep the bladder from emptying and may allow many bacteria to grow in kids. Thus, a healthy potty habit is highly recommended.

Bedding and pillows of infants and youngsters should be washed and ironed regularly before using again, so that it kills any bacteria or germs on the material.

Parents should wash their child's clothes daily in order that sweat, dirt, or moisture does not lead to fungal /bacterial infections.

Include enough vitamin C and zinc to reduce bacterial growth in your kid's diet and don't make the child wear tight underwear.

A good bowel program is essential. Keep the poop off the privates as much as possible, which will help keep bacteria from causing an infection. Make sure to wipe from the front to the back.

Obesity

Structured environment could benefit children's health, prevent obesity: Study (The Indian Express: 20210907)

<https://www.hindustantimes.com/lifestyle/health/structured-environment-could-benefit-children-s-health-prevent-obesity-study-101630980088783.html>

Researchers found that behaviours that lead to obesity dropped on school days compared to non-school days. These behaviours can include low physical activity, poor diets, irregular sleep and excess screen and media time.

According to new research from the University of Central Florida, having a structured environment, whether during school days or when stuck in quarantine as the Covid-19 pandemic continues, could benefit children's health.

The findings of the study were published in the journal 'Childhood Obesity'.

In a study of more than 50 rural schoolchildren over the course of two weeks, researchers found that behaviours that lead to obesity - like too much sedentary behaviour or screen time - dropped on school days compared to non-school days, while amounts of activity increased.

The findings are important because more than 20 per cent of US children ages 6 to 11 are obese, which could lead to problems such as type 2 diabetes or other diseases, according to the US Centres for Disease Control and Prevention.

The researchers focused on rural children because they are at increased risk for obesity compared to their urban-dwelling counterparts.

Additionally, rural children's obesogenic behaviours have not been studied as much, said Keith Brazendale, an assistant professor in UCF's Department of Health Sciences and the study's lead author.

These behaviours can include low physical activity, poor diets, irregular sleep and excess screen and media time.

The researchers used wristband accelerometers to compare the students' physical activity and sleep on school and non-school days in addition to diaries of daily activities, diet and screen time that were recorded by the parents.

They found that children accumulated an average of 16 additional minutes of moderate-to-vigorous physical activity per day on school days compared to non-school days.

Furthermore, students reduced their average daily sedentary time by about an hour each day and their screen time by about an hour and a half each day on school days compared to non-school days.

In a separate study of a sub-sample of the rural children, the researchers found that rural children exhibited accelerated weight gain during five months of home quarantine due to the closure of schools and community-operated programs.

"This supports the benefit of attending schools and programs," Brazendale stated.

To combat obesogenic behaviours on non-school days or during quarantine, some sort of structured program or at least a structured schedule for children on those days is recommended, Brazendale said.

"It's not necessarily the program itself that always provides the direct benefit, but the presence of 'attending something' seems to shape behaviours outside of the program's operating hours and almost sets a default schedule for the day for the child, like when they wake up or go to bed, or when they eat," Brazendale added.

The researcher specialises in examining elementary school-aged children's obesogenic behaviours during different times of the year, especially those from low-income and minority populations.

His research and that of others suggest that children's behaviours are healthier when they have consistent routine and structure in their day-to-day lives, such as on school days compared to other times when a structure is not necessarily as present, such as in the summer or on weekends.

He said that even on rainy days or when it's not safe to go outside, organising a plan of activities - even if they take place in the home - can be a good way to keep children engaged in healthy consistent routines.

"This means may be having a very loose schedule that has time for children's snack, free play time, maybe some indoor exercises that don't require a lot of space such as aerobics, dancing to music, or even yoga," he said.

"I also encourage rule-setting around screen and media time, especially in the evening as bedtime approaches, as this can be beneficial for the child," he added.

The US Department of Health and Human Services recommends that children and adolescents ages 6 through 17 do 60 minutes or more of moderate-to-vigorous physical activity daily. Screen time should be limited to one to two hours a day, according to the CDC.

Study co-authors included UCF health sciences undergraduate students Michael Blankenship '21 and Serina Rayan '21, a Burnett Honours Scholar; biomedical sciences majors Daniel Eisenstein and Alejandra Rey '21. Jeanette Garcia and Cassie L. Odahowski, assistant professors in UCF's Department of Health Sciences; and Ana Leon, Professor Emerita in UCF's School of Social Work, were also co-authors on this project.

Brazendale earned his doctorate in exercise science from the University of South Carolina-Columbia. He joined UCF's Department of Health Sciences, part of the College of Health Professions and Sciences, in 2019.

Asthma

It turns out that asthma worsens at night, finds new study (Hindustan Times: 20210907)

<https://www.healthshots.com/health-news/predicting-alzheimers-is-now-possible-says-study/>

As many as 75 percent of people with asthma report experiencing worsening asthma severity at night.

For hundreds of years, people have observed that asthma severity often worsens in the nighttime. One longstanding question has been to what degree the body's internal circadian clock — as opposed to behaviors, such as sleep and physical activities — contributes to the worsening of asthma severity.

Here's what the study has to say

Using two circadian protocols, investigators from Brigham and Women's Hospital and Oregon Health & Science University have pinned down the influence of the circadian system, uncovering a key role for the biological clock in asthma. Results of the study are published in the journal *The Proceedings of the National Academy of Sciences*.

Understanding the mechanisms that influence asthma severity could have important implications for both studying and treating asthma.

“This is one of the first studies to carefully isolate the influence of the circadian system from the other factors that are behavioral and environmental, including sleep,” said co-corresponding author Frank A.J.L. Scheer, PhD, MSc, director of the Medical Chronobiology Program in the Division of Sleep and Circadian Disorders at the Brigham.

Co-corresponding author Steven A. Shea, PhD, professor and director at Oregon Institute of Occupational Health Sciences added, “We observed that those people who have the worst asthma in general are the ones who suffer from the greatest circadian-induced drops in pulmonary function at night, and also had the greatest changes induced by behaviors, including sleep. We also found that these results are clinically important because, when studied in the laboratory, symptom-driven bronchodilator inhaler use was as much as four times more often during the circadian night than during the day.”

As many as 75 percent of people with asthma — 20 million people in the U.S. — report experiencing worsening asthma severity at night. Many behavioral and environmental factors, including exercise, air temperature, posture, and sleep environment, are known to influence asthma severity. Scheer, Shea, and colleagues wanted to understand the contributions of the internal circadian system to this problem.

Keep a check on your asthma

The circadian system is composed of a central pacemaker in the brain (the suprachiasmatic nucleus) and “clocks” throughout the body and is critical for the coordination of bodily functions and to anticipate the daily cycling environmental and behavioral demands.

To disentangle the influence of the circadian system from that of sleep and other behavioural and environmental factors, the researchers enrolled 17 participants with asthma (who were not taking steroid medication, but who did use bronchodilator inhalers whenever they felt asthma symptoms were worsening) into two complementary laboratory protocols where lung function, asthma symptoms and bronchodilator use were continuously assessed.

In the “constant routine” protocol, participants spent 38 hours continuously awake, in a constant posture, and under dim light conditions, with identical snacks every two hours. In the “forced desynchrony” protocol, participants were placed on a recurring 28-hour sleep/wake cycle for a week under dim light conditions, with all behaviors scheduled evenly across the cycle.