



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20210817

कोरोना

डबल अटैक से भागेगा कोरोना! 154 दिन के निचले स्तर पर नए केस, टीकाकरण ने भी तोड़ा रिकॉर्ड (Hindustan: 20210817)

<https://www.livehindustan.com/national/story-double-attack-on-coronavirus-new-cases-lowest-in-154-days-and-vaccination-on-highest-in-a-single-day-4375901.html>

देश को कोरोना संक्रमण से बड़ी राहत मिली है। मंगलवार को बीते 24 घंटों में कोरोना के 25,166 नए केस दर्ज किए गए हैं, जो बीते 154 दिनों का सबसे कम आंकड़ा है। इसके चलते कुल मामलों के मुकाबले एक्टिव केसों का प्रतिशत तेजी से घटते हुए 1.15 फीसदी ही रह गया है, जो मार्च 2020 के बाद अब तक सबसे कम है। इसके अलावा एक्टिव केसों की संख्या भी अब 3,69,846 ही रह गई है, जो बीते 146 दिनों में सबसे कम आंकड़ा है। रिकवरी रेट की बात करें तो वह भी लगातार सुधरता जा रहा है। फिलहाल देश में कोरोना का रिकवरी रेट 97.51% है, जो मार्च 2020 के बाद सबसे ज्यादा है।

अब तक भारत में 3,14,48,754 लोग कोरोना संक्रमण को मात देकर सामान्य जिंदगी में लौट चुके हैं। यही नहीं बीते 24 घंटे में ही 36,830 लोग कोरोना से रिकवर हुए हैं। एक तरफ नए मामलों की संख्या 25 हजार के करीब होने और दूसरी तरफ 36 हजार लोगों के रिकवर होने के चलते एक ही दिन में एक्टिव केसों में करीब 10,000 की कमी देखने को मिली है। इसके अलावा वैक्सीनेशन की रफ्तार भी अब एक बार फिर से तेज हो गई है। बीते 24 घंटों में 88.13 लाख वैक्सीन डोज दी गई हैं। जो किसी एक दिन में टीकाकरण का अब तक का सबसे बड़ा आंकड़ा है।

देश में अब तक 55 करोड़ टीके लगे, पॉजिटिविटी रेट भी घटा

देश भर में अब तक 55.47 करोड़ से ज्यादा कोरोना वायरस के टीके लग चुके हैं। एक तरफ तेजी से घट रहे नए केसों और दूसरी तरफ टीकाकरण की रफ्तार ने कोरोना की गति को थामने का काम किया है। इसके चलते लंबे समय के बाद वीकली पॉजिटिविटी रेट अब 2 फीसदी से भी कम हो गया है। डेली पॉजिटिविटी भी अब महज 1.61 फीसदी ही रह गया है। बीते 22 दिनों से यह 3 फीसदी से कम बना हुआ है। अप्रैल और मई में कोरोना की दूसरी लहर के पीक के मुकाबले देखें तो अब हालात काफी अच्छे हैं। उस दौरान महज एक दिन में ही नए केसों का आंकड़ा 3 से 4 लाख तक पहुंच गया था।

Explained: Can the vaccinated develop long Covid after a breakthrough infection? (The Indian Express: 20210817)

<https://indianexpress.com/article/explained/vaccination-breakthrough-infection-covid-long-explained-7457431/>

While preliminary research suggests that it is, in fact, possible for a breakthrough case to lead to symptoms that can persist for weeks to months, there are still more questions than answers.

While some breakthrough cases among those who are fully vaccinated against COVID-19 are inevitable, they are unlikely to result in hospitalization or death. But one important question about breakthrough infection that remains unanswered is: Can the vaccinated develop so-called long COVID?

Long COVID refers to a set of symptoms — such as severe fatigue, brain fog, headache, muscle pain and sleep problems — that can persist for weeks or months after the active infection has ended. The syndrome is poorly understood, but studies suggest that between 10% and 30% of adults who catch the virus may experience long COVID, including those who experienced only mild illness or no symptoms at all.

But the vast majority of data collected about long COVID has been in the unvaccinated population. The risk of developing long COVID for the fully vaccinated who get infected after vaccination has not been studied.

While preliminary research suggests that it is, in fact, possible for a breakthrough case to lead to symptoms that can persist for weeks to months, there are still more questions than answers.

What percent of breakthrough cases result in lingering symptoms? How many of those people recover? Are the persistent symptoms after breakthrough infection as severe as those that occur in the unvaccinated?

“I just don’t think there is enough data,” said Dr. Zijian Chen, medical director at the Center for Post-COVID Care at Mount Sinai Health System in New York. “It’s too early to tell. The population of people getting sick post vaccination isn’t that high right now, and there’s no good tracking mechanism for these patients.”

One recent study of Israeli health care workers published in the *New England Journal of Medicine* offers a glimpse of the risk of long COVID after a breakthrough infection. Among 1,497 fully vaccinated health care workers, 39 of them — about 2.6% — developed breakthrough infections. (All of the workers were believed to be infected after contact with an unvaccinated person, and the study was conducted before the delta variant became dominant.)

While most of the breakthrough cases were mild or asymptomatic, seven out of 36 workers tracked at six weeks (19%) still had persistent symptoms. These long COVID symptoms included a mix of prolonged loss of smell, persistent cough, fatigue, weakness, labored breathing or muscle pain.

But the study’s authors caution against drawing too many conclusions from the research. The sample size — just seven patients — is small. And the research was designed to study antibody levels in the infected, said Dr. Gili Regev-Yochay, director of the infectious disease epidemiology unit at Sheba Medical Center. It was not designed to study the risk of long COVID after a breakthrough infection.

“It was not the scope of this paper,” Regev-Yochay said. “I don’t think we have an answer to that.”

Even so, the fact that 1 in 5 of the health care workers who had breakthrough infections still had lingering symptoms after six weeks appears to be the first indication from a peer-reviewed study that long COVID is possible after a breakthrough infection.

Complicating the study of breakthrough infections is the fact that the U.S. Centers for Disease Control and Prevention only tracks post-vaccination infections that result in hospitalization or death. While the CDC does continue to study breakthrough infections in several large cohorts, the lack of data on all breakthrough cases remains a source of frustration among scientists and patient advocacy groups.

“It’s very frustrating not to have data at this point in the pandemic to know what happens to breakthrough cases,” said Akiko Iwasaki, an immunologist at Yale School of Medicine who is conducting studies of long COVID. “If mild breakthrough infection is turning into long COVID, we don’t have a grasp of that number.”

But some experts predict the surge of new cases caused by the spread of the delta variant will, unfortunately, lead to more breakthrough cases in the coming months. Chen said it will take

several months before patients with long COVID from a breakthrough infection are enrolled in studies.

“We’re waiting for these patients to show up at our doors,” Chen said.

Despite the lack of data, one thing is clear: Getting vaccinated will reduce the risk of getting infected and getting long COVID, said Athena Akrami, a neuroscientist at University College London who collected and published data from nearly 4,000 long COVID patients after developing long COVID herself after a March 2020 bout with COVID-19.

“It’s simple math,” Akrami said. “If you reduce infections, then the likelihood of long COVID will drop automatically.”

गंदा पानी और दूषित भोजन

बरसात के मौसम में गंदा पानी और दूषित भोजन फैलाते हैं ये बीमारियां, लक्षणों की पहचान कर ऐसे करें बचाव (Dainik Jagran: 20210817)

<https://www.jagran.com/lifestyle/health-diseases-spread-due-to-dirty-water-and-food-during-the-monsoon-season-know-their-symptoms-and-treatment-21934187.html>

जब भी बारिश का जिक्र होता है तो सभी को सबसे पहले गर्मागर्म चाय-पकौड़ों की याद आती है पर इस मौसम में सेहत का ध्यान रखना और ज्यादा जरूरी है क्योंकि वातावरण में मौजूद नमी मच्छर और बैक्टीरिया के कारण कई तरह की बीमारियां परेशान करती हैं।

बरसात के मौसम में जल-निकासी की समुचित व्यवस्था न होने के कारण पीने का पानी दूषित हो जाता है। इन दिनों मक्खियां भी बहुत तेजी से संक्रमण फैलाती हैं। गंदे पानी और दूषित भोजन की वजह से लोगों को कई तरह की स्वास्थ्य समस्याएं परेशान करती हैं, जो इस प्रकार हैं:

1. हेपेटाइटिस ए और ई

वायरस की वजह से होने वाले हेपेटाइटिस नामक लिवर संक्रमण के कई प्रकार हैं, पर बरसात के मौसम में दूषित खानपान के कारण सबसे ज्यादा हेपेटाइटिस ए और ई की समस्या होती है। आम बोलचाल की भाषा में इसे जॉन्डिस या पीलिया भी कहते हैं।

लक्षण

बुखार, कमजोरी, भोजन में अरुचि, जी मिचलाना, आंखों, त्वचा और यूरिन की रंगत में पीलापन आदि।

जांच एवं उपचार

लिवर फंक्शन टेस्ट और वायरल सेरोलॉजी के जरिए जॉन्डिस की पहचान हो जाती है। संक्रमण होने के 15 से 45 दिनों के बाद व्यक्ति में इसके लक्षण नजर आते हैं। हालांकि उपचार के बाद इस समस्या का समाधान हो जाता है। पीड़ित व्यक्ति को घी-तेल, मिर्च-मसाले से दूर रहने और बेडरेस्ट की सलाह दी जाती है। उपचार के लगभग 15 दिनों बाद व्यक्ति पूर्णतः स्वस्थ हो जाता है, लेकिन उसके बाद भी खानपान के मामलों में संयम और स्वच्छता का ध्यान रखना जरूरी है।

2. टाइफाइड

यह सल्मोनल्ला एंटेरिका सेरोटाइप टाइफी नामक बैक्टीरिया की वजह से फैलने वाला गंभीर संक्रामक रोग है। दरअसल संक्रमित व्यक्ति के मल में भी यह बैक्टीरिया जीवित रहता है। खुले में शौच की आदत और सीवेज सिस्टम की व्यवस्था दुरुस्त न होने की वजह से यह लोगों को भोजन के जरिए शरीर में प्रवेश कर जाता है। यह बैक्टीरिया महीनों तक जीवित रहता है और बहुत तेजी से फैलता है। इसी वजह से संक्रमित व्यक्ति को स्वस्थ होने में कम से कम दो सप्ताह का समय लगता है।

लक्षण

सिर और पूरे शरीर में दर्द, बुखार, खांसी, लूज मोशन, भोजन में अरुचि आदि।

उपचार

पुराने समय में इसे मियादी बुखार कहा जाता था यानी यह अपनी निश्चित अवधि पूरी करने के बाद ही दूर होता है। हालांकि अब एंटीबायोटिक्स की मदद से लगभग दो सप्ताह के बाद यह समस्या दूर हो जाती है।

पर्यावरण और प्रकृति

पहाड़ों में भूस्खलन के दोषी हम, प्रकृति नहीं (Navbharat Times: 20210817)

<https://blogs.navbharattimes.indiatimes.com/nbteditpage/we-are-responsible-for-landslides-in-mountains-not-nature/>

कुछ दिन पहले हिमाचल प्रदेश के किन्नौर जिले में भूस्खलन हुआ। तब पहाड़ी का मलबा सीधे राजमार्ग पर आकर गिरा। दोपहर के व्यस्त समय में अचानक हुए इस हादसे में दो बड़े वाहन मलबे में दब गए। इसकी वजह से तीन लोगों की तत्काल मौत हो गई, और कई लोग मलबों के नीचे दब गए। जैसे-जैसे मलबा हटाने का काम आगे बढ़ा, इस हादसे में मरने वालों की संख्या भी बढ़ती रही। ताजा सूचनाओं के मुताबिक दुर्घटना में मरने वालों की संख्या 20 के पार पहुंच चुकी है।

मगर इस घटना की गंभीरता को महज मृतकों की संख्या से नहीं नापा जा सकता और यह कोई अकेली घटना भी नहीं है। तीन हफ्ते पहले इसी जिले में पहाड़ी धंस जाने से एक और बड़ी दुर्घटना हुई थी। हिमाचल और उत्तराखंड में भूस्खलन की घटनाओं में हाल के दिनों में काफी तेजी आई है और यह कोई आश्चर्य की बात भी नहीं है। प्रकृति से छेड़छाड़ करेंगे तो ऐसी घटनाएं होंगी ही। ऐसे में एक सवाल यह बनता है कि किन घटनाओं और गतिविधियों को हम प्रकृति के साथ छेड़छाड़ कहेंगे और वे किस तरह से भूस्खलन का कारण बनती हैं। इस सवाल के जवाब तक पहुंचने के लिए हमें भूस्खलन के वैज्ञानिक कारणों को समझना चाहिए।

भूगर्भ विज्ञान के अनुसार चट्टानें तीन तरह की होती हैं। एक, ज्वालामुखी फटने से भूमि की सतह के नीचे बनकर ठंडी हुई चट्टानें। ये चट्टानें बहुत कठोर और मजबूत होती हैं। दूसरा प्रकार है- रासायनिक प्रक्रिया से बनने वाली चट्टानों का। कर्नाटक, महाराष्ट्र जैसे दक्षिणी राज्यों में ये चट्टानें हैं। इन चट्टानों को 'बेसाल्ट रॉक' कहा जाता है। ये चट्टानें भी कठोर होती हैं। तीसरा प्रकार है- कीचड़ या मलबे से बनी चट्टानों का। ये चट्टानें कठोर नहीं होतीं। हिमालय की चट्टानें मलबे से ही बनी हैं। पहले वहां समुद्र था। समुद्र से ऊपर उठे मलबे से हिमालय का निर्माण हुआ है, इसलिए यहां के पहाड़ सीधी चढ़ाई वाले हैं। वहां बहुत चढ़ाव और ढलान हैं। ये पत्थर कच्चे हैं। इन्हें 'सेडिमेंटरी रॉक्स' कहा जाता है। पहले इन पहाड़ों की ढलानों पर ओक के वृक्षों का जंगल था। ये पेड़ पहाड़ों की मिट्टी पकड़ कर रखते थे। समय के साथ मूल प्राकृतिक पेड़ बड़े पैमाने पर काटे गए। इसके बाद विभिन्न इलाकों में चट्टानें ढहने की घटनाएं बढ़ने लगीं।

मुझे याद है कि हमने 1980-85 के दौरान प्रत्यक्ष फील्ड वर्क करके रिपोर्टें बनाई थीं। तब भी चट्टानों के खिसकने की घटनाएं बहुत होती थीं। लेकिन इसकी पृष्ठभूमि काफी पहले से बनने लगी थी। दरअसल, अंग्रेजों के जमाने में इस इलाके में व्यापार बढ़ना शुरू हुआ। ओक के पेड़ बड़े पैमाने पर काटे गए। जंगलों का सफाया हो गया। जो पेड़ लगाए गए, वे ओक के नहीं थे। व्यापारिक कारणों से ओक के स्थान पर चीड़, पाइन के पेड़ लगाए गए। ये पेड़ मिट्टी को पकड़ कर नहीं रखते। मगर ये भी साबुत नहीं रह सके। उद्योग-व्यवसाय के लिए उन्हें लगातार काटा जाता रहा। इन सबसे भूगर्भ की प्राकृतिक संरचना को चोट पहुंची है। यही नहीं, पिछले तीन-चार दशकों में इन पर्वतों पर मनमाने रास्ते बना दिए गए। जगह-जगह हाइड्रोइलेक्ट्रिक प्रॉजेक्ट बन गए। यह इलाका सुरक्षा के लिहाज से संवेदनशील है। इस वजह से सुरक्षा बलों ने भी बड़े पैमाने पर सड़कें बनवाईं। नतीजे के रूप में भूस्खलन और चट्टानें ढहने की घटनाएं बढ़ने लगी हैं।

उत्तराखंड के चमोली में फरवरी माह में इसी तरह की घटना हुई थी। वहां भी ओक का जंगल नहीं बचा है। पहाड़ियां धंस रही हैं। पिछले कुछ वर्षों में जितने भी छोटे-बड़े ऐसे हादसे हुए हैं, सच पूछा जाए तो उनमें प्रकृति का कोई दोष नहीं है। ये सारी घटनाएं मनुष्य की गतिविधियों के कारण हो रही हैं। हममें प्रकृति के प्रति संवेदनशीलता नहीं बची है। विकास कार्यों का पर्यावरण और प्रकृति पर क्या असर होगा इस पर विचार ही नहीं किया जाता। हमारी ही गलतियों के कारण इस तरह की गंभीर घटनाएं हो रही हैं।

कोविड वैक्सीन

कोवैक्सीन के दो इंजेक्शन फिर नेजल वैक्सीन की बूस्टर डोज... कोरोना से तभी मिलेगी पूरी प्रोटेक्शन? (Navbharat Times: 20210817)

<https://navbharattimes.indiatimes.com/india/bharat-biotech-working-on-covaxin-and-nasal-vaccine-booster-dose-combination/articleshow/85362648.cms>

भारत बायोटेक इस बात पर रिसर्च कर रहा है कि कोवैक्सीन से इम्युनिटी मतबूत करने के बाद नेजल वैक्सीन के लिए बूस्टर डोज दी जाएगी। बूस्टर डोज तीन तरह के इम्युन रेस्पॉंस ट्रिगर करती है।

वैक्सीन की दोनों डोज के बावजूद कोविड संक्रमण के मामले सामने आ रहे हैं। ऐसे में कोवैक्सीन बनाने वाली भारत बायोटेक एक नए अप्रोच पर काम कर रही है। वह कोवैक्सीन के बाद नेजल वैक्सीन देने के नतीजों पर रिसर्च कर रही है। कंपनी के चेयरमैन और मैनेजिंग डायरेक्टर डॉ कृष्णा एल्ला के अनुसार, इस तरह नेजल वैक्सीन बूस्टर डोज के जैसे काम करेगी और संक्रमण से बचाएगी। टाइम्स नाउ इंडिया@75: द फ्रीडम समिट में उन्होंने कहा कि कोवैक्सीन की ही तीसरी डोज देकर इम्युनिटी रेस्पांस टाइम को बढ़ाने पर आखिरी फैसला सरकार का होगा।

कोवैक्सीन के साथ बूस्टर डोज... कैसे करेगी काम?

डॉ एल्ला ने कहा कि हम कोवैक्सीन के बाद नेजल के कॉम्बिनेशन पर काम कर रहे हैं। उन्होंने कहा कि 'फिर कोवैक्सीन इम्युनिटी सिस्टम को मजबूत करेगी और फिर नेजल उसे बूस्ट करेगी। नेजल तीन तरह के इम्युन रेस्पांस पैदा करती है- IGG, IGA और म्यूकोजल इम्युनिटी। ये तीनों इम्युनिटीज ताकतवर हैं और व्यक्ति को संक्रमित होने से बचा सकती हैं।"

Covaxin की तीसरी डोज की जरूरत है?

अगर डेल्टा वेरिएंट के खिलाफ भी कोवैक्सीन असरदार मिलती है तो भी यह सरकार तय करेगी कि तीसरी डोज की जरूरत है या नहीं। डॉ एल्ला ने कहा कि क्या लंबे समय के लिए इम्युनिटी देने की खातिर कोवैक्सीन की तीसरी डोज देनी चाहिए, यह फैसला सरकार का है। उन्होंने कहा, "मुझे लगता है कि हमने एक बूस्टर डोज टेस्ट की है। हम नतीजों का इंतजार कर रहे हैं लेकिन अगर आप एक बूस्टर डोज की सिफारिश करते हैं तो वैक्सीन की कमी हो जाएगी। इसलिए यह थोड़ी जटिल स्थिति है।"

हर साल लगवानी पड़ सकती है कोरोना वैक्सीन

वैक्सीन की सप्लाई कैसे होगी?

डॉ एल्ला के मुताबिक, अगर नेजल वैक्सीन ठीक से काम करती है तो उत्पादन क्षमता दोगुनी कर दी जाएगी। फिलहाल भारत बायोटेक हर महीने 2 से ढाई करोड़ डोज सप्लाई कर रहा है। अगले कुछ महीनों में इसके 5.8 करोड़ डोज तक बढ़ जाने की उम्मीद है। डॉ एल्ला ने समझाया कि एक इनऐक्टिवेटेड वैक्सीन को बनाना और उत्पादन क्षमता बढ़ाना बाकी के मुकाबले काफी मुश्किल है।

mRNA वैक्सीन का उत्पादन दुनिया की सबसे आसान तकनीकों से हो सकता है। आप एक हफ्ते में तैयार कर सकते हैं, आप mRNA के साथ 20 मिलियन डोज बना सकते हैं। एडेनोवायरस वैक्सीन को

में 7 दिन से कम में बना सकता हूँ। जबकि उसी इनएक्टिवेटेड वैक्सीन को बच्चों के लिए बनाने में हमें 120 दिन तक लग जाते हैं। लोग अभी तक यह समझे नहीं हैं कि यह तकनीक कितनी जटिल है और सबसे अच्छी है।

डॉ कृष्णा एल्ला, भारत बायोटेक

एल्ला ने यह भी साफ किया कि Covaxin को WHO से अप्रूवल में इसलिए देरी हुई क्योंकि कंपनी को अलग से एफेकसी ट्रायल करने पड़े।

Covid-19 vaccine during pregnancy: Benefits outweigh the risks, says doc (The Indian Express: 20210817)

<https://indianexpress.com/article/parenting/health-fitness/covid-19-vaccine-during-pregnancy-benefits-outweigh-the-risks-says-doc-7456714/>

A pregnant woman with symptomatic Covid-19 is at increased risk of adverse pregnancy outcomes and the fetus is also at risk of perinatal morbidity, and mortality. So, she should definitely take the vaccine.

Dr Sumitra Bachani, Associate Professor, Gynaecologist and Obstetrician Department, and a foetal medicine specialist, Safdarjung Hospital and Vardhaman Mahavir Medical College, explains the impact of Covid-19 during pregnancy and how a woman should take care.

Q. Are pregnant women more susceptible to developing severe Covid?

Pregnant women with symptomatic Covid-19 are at an increased risk of adverse pregnancy outcomes, including admission to the ICU, iatrogenic preterm birth, pregnancy-associated hypertension-like symptoms, operative intervention and even death. Also, there is a higher risk of developing Covid complications if a pregnant woman contracts the infection in the third trimester, which is the last three months of pregnancy. That is because the large uterus presses on the diaphragm and hampers the lung capacity thus making it more difficult for the woman to maintain oxygen saturation.

Pregnant women with certain high-risk conditions such as hypertension, diabetes, chronic respiratory conditions (COPD), asthma, cystic fibrosis, homozygous sickle cell disease, or those on immunosuppression therapies, dialysis or advanced chronic kidney disease,

congenital or acquired heart disease and organ transplant recipients have greater risk of severe illness from Covid-19.

Q. If a mother catches Covid-19, does it affect the fetal or neonatal outcomes?

Whether an infected mother can transmit the infection to the foetus during pregnancy is a matter under research. To date, we have observed that mild to moderate Covid-19 infection in mothers does not affect the foetus or the newborn much. However, in severe cases, the foetus is at risk of perinatal morbidity due to hypoxia or low oxygen saturation, preterm birth, and mortality.

Q. Can a mother with Covid-19 infection stay with her newborn?

The mother and infant can stay together in the same room if the mother does not have severe Covid-19 which requires hospitalisation. Make sure that the room is well-ventilated and there is someone else also in the family who is Covid negative to take care of the infant. A mother should wear a mask and maintain a six feet distance from the child. However, she can breastfeed the child. Prior to handling the infant or while breastfeeding, the mother should wash her hands and wear a mask. She should also sanitise the surroundings regularly. Besides, the infant should not be made to wear a mask. Once the mother is non-infectious she can keep the baby with herself at all times.

Q. How important is the Covid vaccine for pregnant women and young mothers?

As I have mentioned above, a pregnant woman with symptomatic Covid-19 is at increased risk of adverse pregnancy outcomes and the foetus is also at risk of perinatal morbidity, and mortality. So, she should definitely take the vaccine. Experts say the benefits of vaccination outweigh the risk of morbidity and mortality associated with Covid-19, especially if contracted during pregnancy. Besides, there is an additional benefit—a vaccinated mother also passes the antibodies she develops post vaccination to the unborn foetus through blood as well as through breast milk to her neonate.

Q. In what conditions should a mother not take the vaccine?

Just like the general population, a pregnant woman too should avoid taking the vaccine if she has an anaphylactic or allergic reaction to the previous dose of Covid-19 vaccine or to other vaccines or injectable therapies, pharmaceutical products, food items, etc.

If she has recently been diagnosed with Covid-19 infection, she should wait for 12 weeks from the onset of infection or four to eight weeks from recovery from active Covid-19 infection for taking the vaccine. Or if she has been treated with anti-Covid-19 monoclonal antibodies or convalescent plasma recently.

Pregnancy

Eight effective tips to reduce flatulence during pregnancy (The Indian Express: 20210817)

<https://indianexpress.com/article/lifestyle/health/tips-reduce-flatulence-during-pregnancy-constipation-gas-fibre-exercise-7450042/>

"Choose the remedies that work best in relieving your gas problem. Happy pregnancy!" said nutritionist Lovneet Batra

Pregnancy is a new phase for all women; it is blissful but comes with its share of challenges. A common issue that many mothers-to-be experience is flatulence or problems in passing gas which causes an uncomfortable feeling. If you, too, have been facing such an issue, here's a quick guide from nutritionist Lovneet Batra to help you.

"Pregnancy is a phase where bodily changes can slow digestion and cause gas. One cannot completely prevent it yet can do few things to minimise the problem and reduce discomfort," she said in an Instagram post.

Why does it happen?

Since the body produces more progesterone hormone to support the pregnancy, the muscles in the body tend to go in a relaxation mode. This includes the muscles of the intestine which, in turn, slows down the digestion process. This result in gas to build up, and hence, bloating, burping, and flatulence.

What can you do?

According to Batra, following are some simple things that can help reduce discomfort:

Fill up with fibre

Fibre brings water into the intestines, helping soften the stool and allowing it to pass easily. Include 25-30 grams of high fibre foods such as prunes, figs, bananas, vegetables as well as whole grains in your diet to help ease gas concerns.

Stay hydrated

Water and other healthy fluids keep your body hydrated and help prevent constipation.

Add ghee to your meals

Ghee clears the intestinal passage and reduces the risk of constipation and flatulence issues.

Consume cooked food

During pregnancy, the body's process of breaking down food becomes slower, allowing it more time to absorb nutrients. Cooked food can be chewed well and gets easily digested thereby reducing the chances of flatulence.

Opt for easily digestible foods

Foods such as moong dal and sooji halwa work wonders in pregnancy since the digestive system requires less effort to break down such foods. This causes less gas.

Limit cruciferous vegetables

Cabbage, cauliflower, broccoli, Brussels sprouts and asparagus produce more gas than any other vegetables.

Physical activity is a must

Physical activity and exercise should be a part of your daily routine.

Have small and frequent meals

Go for 5-6 smaller meals a day which makes your body digest it more easily.

“Choose the remedies that work the best in relieving your gas problem. Happy pregnancy!” she mentioned.

Covid-19 test

NIH scientists develop faster Covid-19 test than RT-PCR (The Indian Express: 20210817)

<https://indianexpress.com/article/explained/nih-scientists-develop-faster-covid-19-test-than-rt-pcr-7457049/>

The method is the result of a collaboration among researchers at the US National Eye Institute (NEI), the NIH Clinical Center (CC), and the National Institute of Dental and Craniofacial Research (NIDCR).

The researchers used an agent made by the lab supply company Bio-Rad called ‘Chelex 100 resin’ to preserve SARS-CoV-2 RNA in samples for detection by RT-qPCR. (File photo)

Scientists at the US National Institutes of Health (NIH) have developed a new sample preparation method to detect SARS-CoV-2. The method bypasses extraction of the virus' genetic RNA material, potentially reducing test time and cost.

The method is the result of a collaboration among researchers at the US National Eye Institute (NEI), the NIH Clinical Center (CC), and the National Institute of Dental and Craniofacial Research (NIDCR).

Standard tests involve amplifying viral RNA to detectable levels using a technique called RT-qPCR. But first, the RNA must be extracted from the sample. Manufacturers of RNA extraction kits have had difficulty keeping up with demand during the pandemic.

The researchers used an agent made by the lab supply company Bio-Rad called 'Chelex 100 resin' to preserve SARS-CoV-2 RNA in samples for detection by RT-qPCR.

“We used nasopharyngeal and saliva samples with various virion concentrations to evaluate whether they could be used for direct RNA detection. The answer was yes, with markedly high sensitivity. Also, this preparation inactivated the virus, making it safer for lab personnel to handle positive samples,” the NIH quoted lead author Bin Guan, of the US National Eye Institute, as saying. The paper has been published in iScience.

The team made their discovery by testing a variety of chemicals using synthetic and human samples to identify those that could preserve the RNA in samples with minimal degradation while allowing direct detection of the virus by RT-qPCR.

To validate the test, they collected patient samples and stored them in either viral transport media, or the newly developed chelating-resin-buffer at the NIH Symptomatic Testing Facility.

The samples in viral transport media were tested by the Covid-19 testing team at NIH's Clinical Center, using conventional RNA extraction and RT-qPCR testing. The samples in the chelating-resin-buffer were heated and the viral RNA was, then, tested by RT-qPCR. The new preparation significantly increased the RNA yield available for testing, compared to the standard method.

Heart Disease

Eating more plant foods may lower heart disease risk in young adults, older women (Science Daily: 20210817)

<https://www.sciencedaily.com/releases/2021/08/210804123607.htm>

Eating a plant-centered diet during young adulthood is associated with a lower risk of heart disease in middle age, according to a long-term study with about 30 years of follow-up. A separate study with about 15 years of follow-up found that eating more plant-based foods that have been shown to lower cholesterol, called the 'Portfolio Diet', is associated with lower risk of cardiovascular disease in postmenopausal women.

Eating more nutritious, plant-based foods is heart-healthy at any age, according to two research studies published today in the Journal of the American Heart Association, an open access journal of the American Heart Association.

In two separate studies analyzing different measures of healthy plant food consumption, researchers found that both young adults and postmenopausal women had fewer heart attacks and were less likely to develop cardiovascular disease when they ate more healthy plant foods.

The American Heart Association Diet and Lifestyle Recommendations suggest an overall healthy dietary pattern that emphasizes a variety of fruits and vegetables, whole grains, low-fat dairy products, skinless poultry and fish, nuts and legumes and non-tropical vegetable oils. It also advises limited consumption of saturated fat, trans fat, sodium, red meat, sweets and sugary drinks.

One study, titled "A Plant-Centered Diet and Risk of Incident Cardiovascular Disease during Young to Middle Adulthood," evaluated whether long-term consumption of a plant-centered diet and a shift toward a plant-centered diet starting in young adulthood are associated with a lower risk of cardiovascular disease in midlife.

"Earlier research was focused on single nutrients or single foods, yet there is little data about a plant-centered diet and the long-term risk of cardiovascular disease," said Yuni Choi, Ph.D., lead author of the young adult study and a postdoctoral researcher in the division of epidemiology and community health at the University of Minnesota School of Public Health in Minneapolis.

Choi and colleagues examined diet and the occurrence of heart disease in 4,946 adults enrolled in the Coronary Artery Risk Development in Young Adults (CARDIA) study. Participants were 18- to 30-years-old at the time of enrollment (1985-1986) in this study and were free of cardiovascular disease at that time. Participants included 2,509 Black adults and 2,437 white adults (54.9% women overall) who were also analyzed by education level

(equivalent to more than high school vs. high school or less). Participants had eight follow-up exams from 1987-88 to 2015-16 that included lab tests, physical measurements, medical histories and assessment of lifestyle factors. Unlike randomized controlled trials, participants were not instructed to eat certain things and were not told their scores on the diet measures, so the researchers could collect unbiased, long-term habitual diet data.

After detailed diet history interviews, the quality of the participants diets was scored based on the A Priori Diet Quality Score (APDQS) composed of 46 food groups at years 0, 7 and 20 of the study. The food groups were classified into beneficial foods (such as fruits, vegetables, beans, nuts and whole grains); adverse foods (such as fried potatoes, high-fat red meat, salty snacks, pastries and soft drinks); and neutral foods (such as potatoes, refined grains, lean meats and shellfish) based on their known association with cardiovascular disease.

Participants who received higher scores ate a variety of beneficial foods, while people who had lower scores ate more adverse foods. Overall, higher values correspond to a nutritionally rich, plant-centered diet.

"As opposed to existing diet quality scores that are usually based on small numbers of food groups, APDQS is explicit in capturing the overall quality of diet using 46 individual food groups, describing the whole diet that the general population commonly consumes. Our scoring is very comprehensive, and it has many similarities with diets like the Dietary Guidelines for Americans Healthy Eating Index (from the U.S. Department of Agriculture's Food and Nutrition Service), the DASH (Dietary Approaches to Stop Hypertension) diet and the Mediterranean diet," said David E. Jacobs Jr., Ph.D., senior author of the study and Mayo Professor of Public Health in the division of epidemiology and community health at the University of Minnesota School of Public Health in Minneapolis.

Researchers found:

During 32 years of follow-up, 289 of the participants developed cardiovascular disease (including heart attack, stroke, heart failure, heart-related chest pain or clogged arteries anywhere in the body).

People who scored in the top 20% on the long-term diet quality score (meaning they ate the most nutritionally rich plant foods and fewer adversely rated animal products) were 52% less likely to develop cardiovascular disease, after considering several factors (including age, sex, race, average caloric consumption, education, parental history of heart disease, smoking and average physical activity).

In addition, between year 7 and 20 of the study when participants ages ranged from 25 to 50, those who improved their diet quality the most (eating more beneficial plant foods and fewer adversely rated animal products) were 61% less likely to develop subsequent cardiovascular disease, in comparison to the participants whose diet quality declined the most during that time.

There were few vegetarians among the participants, so the study was not able to assess the possible benefits of a strict vegetarian diet, which excludes all animal products, including meat, dairy and eggs.

"A nutritionally rich, plant-centered diet is beneficial for cardiovascular health. A plant-centered diet is not necessarily vegetarian," Choi said. "People can choose among plant foods that are as close to natural as possible, not highly processed. We think that individuals can include animal products in moderation from time to time, such as non-fried poultry, non-fried fish, eggs and low-fat dairy."

Because this study is observational, it cannot prove a cause-and-effect relationship between diet and heart disease.

The study was funded by the National Heart, Lung and Blood Institute of the National Institutes of Health; Healthy Food Healthy Lives Institute at the University of Minnesota; and the MnDrive Global Food Ventures Professional Development Program at the University of Minnesota.

In another study, "Relationship Between a Plant-Based Dietary Portfolio and Risk of Cardiovascular Disease: Findings from the Women's Health Initiative (WHI) Prospective Cohort Study," researchers, in collaboration with WHI investigators led by Simin Liu, M.D., Ph.D., at Brown University, evaluated whether or not diets that included a dietary portfolio of plant-based foods with U.S. Food and Drug Administration-approved health claims for lowering "bad" cholesterol levels (known as the "Portfolio Diet") were associated with fewer cardiovascular disease events in a large group of postmenopausal women.

The "Portfolio Diet" includes nuts; plant protein from soy, beans or tofu; viscous soluble fiber from oats, barley, okra, eggplant, oranges, apples and berries; plant sterols from enriched foods and monounsaturated fats found in olive and canola oil and avocados; along with limited consumption of saturated fats and dietary cholesterol. Previously, two randomized trials demonstrated that reaching high target levels of foods included in the Portfolio Diet resulted in significant lowering of "bad" cholesterol or low-density lipoprotein cholesterol (LDL-C), more so than a traditional low-saturated-fat National Cholesterol and Education Program diet in one study and on par with taking a cholesterol-lowering statin medication in another.

The study analyzed whether postmenopausal women who followed the Portfolio Diet experienced fewer heart disease events. The study included 123,330 women in the U.S. who participated in the Women's Health Initiative, a long-term national study looking at risk factors, prevention and early detection of serious health conditions in postmenopausal women. When the women in this analysis enrolled in the study between 1993 and 1998, they were between 50-79 years old (average age of 62) and did not have cardiovascular disease. The study group was followed until 2017 (average follow-up time of 15.3 years). Researchers used self-reported food-frequency questionnaires data to score each woman on adherence to the Portfolio Diet.

The researchers found: Compared to women who followed the Portfolio Diet less frequently, those with the closest alignment were 11% less likely to develop any type of cardiovascular disease, 14% less likely to develop coronary heart disease and 17% less likely to develop heart failure.

There was no association between following the Portfolio Diet more closely and the occurrence of stroke or atrial fibrillation.

"These results present an important opportunity, as there is still room for people to incorporate more cholesterol-lowering plant foods into their diets. With even greater adherence to the Portfolio dietary pattern, one would expect an association with even less cardiovascular events, perhaps as much as cholesterol-lowering medications. Still, an 11% reduction is clinically meaningful and would meet anyone's minimum threshold for a benefit. The results indicate the Portfolio Diet yields heart-health benefits," said John Sievenpiper, M.D., Ph.D., senior author of the study at St. Michael's Hospital, a site of Unity Health Toronto in Ontario, Canada, and associate professor of nutritional sciences and medicine at the University of Toronto.

The researchers believe the results highlight possible opportunities to lower heart disease by encouraging people to consume more foods in the Portfolio Diet.

"We also found a dose response in our study, meaning that you can start small, adding one component of the Portfolio Diet at a time, and gain more heart-health benefits as you add more components," said Andrea J. Glenn, M.Sc., R.D., lead author of the study and a doctoral student at St. Michael's Hospital in Toronto and in nutritional sciences at the University of Toronto.

Although the study was observational and cannot directly establish a cause-and-effect relation between diet and cardiovascular events, researchers feel it provides a most reliable estimate for the diet-heart relation to-date due to its study design (included well-validated food frequency questionnaires administered at baseline and year three in a large population of highly dedicated participants). Nevertheless, the investigators report that these findings need to be further investigated in additional populations of men or younger women.

Biomedicine

Metabolism changes with age, just not when you might think (Science Daily: 20210817)

<https://www.sciencedaily.com/releases/2021/08/210812145028.htm>

Most of us remember a time when we could eat anything we wanted and not gain weight. But a new study suggests your metabolism, the rate at which you burn calories, actually peaks much earlier and starts its inevitable decline later than you might think.

Most of us remember a time when we could eat anything we wanted and not gain weight. But a new study suggests your metabolism, the rate at which you burn calories, actually peaks much earlier and starts its inevitable decline later than you might think.

The findings appear in the journal *Science*.

"As we age, there are a lot of physiological changes that occur in the phases of our life such as during puberty and in menopause. . What's odd is that the timing of our 'metabolic life stages' doesn't appear to match the markers we associate with growing up and getting older," said study co-author Jennifer Rood, PhD, Associate Executive Director for Cores and Resources at Pennington Biomedical Research Center.

Four Pennington Biomedical researchers were part of an international team of scientists who analyzed the average calories burned by more than 6,600 people as they went about their daily lives. The participants' ages ranged from one week old to 95 years, and they lived in 29 different countries. The other Pennington Biomedical scientists are Peter Katzmarzyk, PhD, Associate Executive Director for Population and Public Health Sciences; Corby Martin, PhD, Professor and Director, Ingestive Behavior Laboratory; and Eric Ravussin, PhD, Associate Executive Director for Clinical Science.

Most previous large-scale studies measured how much energy the body uses for basic vital functions -- breathing, digesting, and pumping blood -- the calories you need just to stay alive. But basic functions account for just 50 percent to 70 percent of the calories we burn each day. They don't include the energy we spend doing everything else: washing the dishes, walking the dog, breaking a sweat at the gym, even just thinking or fidgeting.

To come up with a number for total daily energy expenditure, the researchers turned to the "doubly labeled water" method. It's a urine test that involves having a person drink water in which the hydrogen and oxygen in the water molecules have been replaced with naturally occurring "heavy" forms, and then measures how quickly they're flushed out.

Scientists have used the technique -- considered the gold standard for measuring daily energy expenditure during normal daily life outside of the lab -- to measure energy expenditure in humans since the 1980s. But previous studies were limited in size and scope due to cost. To

get around that limitation, multiple labs shared their data in a single database, to see if they could tease out truths hidden or only hinted at in previous studies.

Pooling and analyzing energy expenditures across the entire lifespan revealed some surprises.

"Some people think of their teens and 20s as the age when their calorie-burning potential hits its peak," Dr. Katzmarzyk said. "But the study shows that, pound for pound, infants had the highest metabolic rates of all."

Energy needs shoot up during the first 12 months of life. By their first birthdays, babies burn calories 50 percent faster for their body size than adults.

And that's not just because infants are busy tripling their birth weight in their first year.

"The babies grow rapidly, which accounts for much of the effect. However, after you control for this, their energy expenditures tend to be higher than what you would expect for their body size," Dr. Martin said.

An infant's explosive metabolism may help explain why children who don't get enough to eat during this developmental stage are less likely to survive and grow up to be healthy adults.

"More research is needed to better understand the metabolism of babies. We need to know what is driving higher energy expenditures," Dr. Martin said.

After the initial surge in infancy, a person's metabolism slows by about 3 percent each year until our 20s, when it levels off into a new normal.

Surprisingly, the growth spurts of adolescence didn't generate an increase in daily calorie needs after researchers took body size into account. Another surprise? People's metabolisms were most stable from their 20s through their 50s. Calorie needs during pregnancy grew no more than expected.

The findings suggest that other factors lie behind the so-called "middle-age spread."

The data suggest that our metabolisms don't really start to decline again until after age 60. The slowdown is gradual, only 0.7 percent a year. But a person in their 90s needs 26 percent fewer calories each day than someone in midlife.

Lost muscle mass as we get older may be partly to blame, the researchers say, since muscle burns more calories than fat. But it's not the whole picture.

"We took dwindling muscle mass into account. After 60, a person's cells slow down," Dr. Ravussin said.

The patterns held even when differing activity levels were taken into account.

Aging goes hand in hand with so many other physiological changes that it has been difficult to parse what drives the shifts in energy expenditure. But the new research supports the idea that it's more than age-related changes in lifestyle or body composition.

"This study shows that the work cells do changes over the course of the lifespan in ways we couldn't fully appreciate before. But massive data sets like the one we collaborated on allow us to answer questions we couldn't address," Dr. Ravussin said.

This research was supported by the United States National Science Foundation (BCS-1824466), the International Atomic Energy Agency, Taiyo Nippon Sanso and SERCON.

Genetics

Potential role of 'junk DNA' sequence in aging, cancer (Science Daily: 20210817)

<https://www.sciencedaily.com/releases/2021/07/210723105258.htm>

Researchers have recently identified a DNA region known as VNTR2-1 that appears to drive the activity of the telomerase gene, which has been shown to prevent aging in certain types of cells. Knowing how the telomerase gene is regulated and activated and why it is only active in certain cell types could someday be the key to understanding how humans age and how to stop the spread of cancer.

The human body is essentially made up of trillions of living cells. It ages as its cells age, which happens when those cells eventually stop replicating and dividing. Scientists have long known that genes influence how cells age and how long humans live, but how that works exactly remains unclear. Findings from a new study led by researchers at Washington State University have solved a small piece of that puzzle, bringing scientists one step closer to solving the mystery of aging.

A research team headed by Jiyue Zhu, a professor in the College of Pharmacy and Pharmaceutical Sciences, recently identified a DNA region known as VNTR2-1 that appears to drive the activity of the telomerase gene, which has been shown to prevent aging in certain types of cells. The study was published in the journal Proceedings of the National Academy of Sciences (PNAS).

The telomerase gene controls the activity of the telomerase enzyme, which helps produce telomeres, the caps at the end of each strand of DNA that protect the chromosomes within our cells. In normal cells, the length of telomeres gets a little bit shorter every time cells duplicate their DNA before they divide. When telomeres get too short, cells can no longer reproduce, causing them to age and die. However, in certain cell types -- including reproductive cells and cancer cells -- the activity of the telomerase gene ensures that telomeres are reset to the

same length when DNA is copied. This is essentially what restarts the aging clock in new offspring but is also the reason why cancer cells can continue to multiply and form tumors.

Knowing how the telomerase gene is regulated and activated and why it is only active in certain types of cells could someday be the key to understanding how humans age, as well as how to stop the spread of cancer. That is why Zhu has focused the past 20 years of his career as a scientist solely on the study of this gene.

Zhu said that his team's latest finding that VNTR2-1 helps to drive the activity of the telomerase gene is especially notable because of the type of DNA sequence it represents.

"Almost 50% of our genome consists of repetitive DNA that does not code for protein," Zhu said. "These DNA sequences tend to be considered as 'junk DNA' or dark matters in our genome, and they are difficult to study. Our study describes that one of those units actually has a function in that it enhances the activity of the telomerase gene."

Their finding is based on a series of experiments that found that deleting the DNA sequence from cancer cells -- both in a human cell line and in mice -- caused telomeres to shorten, cells to age, and tumors to stop growing. Subsequently, they conducted a study that looked at the length of the sequence in DNA samples taken from Caucasian and African American centenarians and control participants in the Georgia Centenarian Study, a study that followed a group of people aged 100 or above between 1988 and 2008. The researchers found that the length of the sequence ranged from as short as 53 repeats -- or copies -- of the DNA to as long as 160 repeats.

"It varies a lot, and our study actually shows that the telomerase gene is more active in people with a longer sequence," Zhu said.

Since very short sequences were found only in African American participants, they looked more closely at that group and found that there were relatively few centenarians with a short VNTR2-1 sequence as compared to control participants. However, Zhu said it was worth noting that having a shorter sequence does not necessarily mean your lifespan will be shorter, because it means the telomerase gene is less active and your telomere length may be shorter, which could make you less likely to develop cancer.

"Our findings are telling us that this VNTR2-1 sequence contributes to the genetic diversity of how we age and how we get cancer," Zhu said. "We know that oncogenes -- or cancer genes -- and tumor suppressor genes don't account for all the reasons why we get cancer. Our research shows that the picture is a lot more complicated than a mutation of an oncogene and makes a strong case for expanding our research to look more closely at this so-called junk DNA."

Zhu noted that since African Americans have been in the United States for generations, many of them have Caucasian ancestors from whom they may have inherited some of this sequence. So as a next step, he and his team hope to be able to study the sequence in an African population.

In addition to Zhu, authors on the paper include co-first authors Tao Xu and De Cheng and others at Washington State University, as well as their collaborators at Northeast Forestry University in China; Pennsylvania State University; and North Carolina State University.

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