Oxford COVID-19 vaccine

Serum Institute has begun manufacturing Oxford COVID-19 vaccine (The Hindu: 20200723)


Institute will seek permission to carry out a phase-3 trial in India.

The Pune-based Serum Institute of India has already begun manufacturing the Oxford vaccine (ChAdOx1 nCoV-19) for novel coronavirus. The company intends to manufacture two-three million doses by end-August, says Suresh Jadhav, Executive Director of Serum Institute.

According to Mr. Jadhav, the company will begin manufacturing vaccines of such quantity that meets the requirements of a commercial-scale batch for phase-3 trial of the vaccine. The number of doses manufactured per commercial-scale batch would depend on whether the vials will be a single- or multi-dose.

While phase-3 trials have begun in the UK, Brazil (June 20) and South Africa (first week of July), Serum Institute will soon be seeking permission to carry out a multicentric phase-3 trial here in India. The trial will recruit a few thousand participants.

“Based on the safety and immunogenicity data of the phase-3 trial carried out in India, we will trigger production of the vaccines even before the results are formally available,” says Mr. Jadhav. It might take up to four months to complete the phase-3 trial.

In response to whether the company has the capacity to manufacture millions of coronavirus vaccines without impacting the production of regular vaccines, Mr. Jadhav told The Hindu: “The COVID-19 vaccine production will be separate and will not impact the production of other vaccines we normally manufacture.”
In addition to manufacturing the Oxford vaccine, Serum Institute may take up additional manufacturing of COVID-19 vaccines developed by other entities. “Talks are under way with other developers,” he says. “Besides Oxford vaccine, we have the capacity to manufacture COVID-19 vaccines of other developers too without impinging routine vaccine production.”

**Psychological pandemic**

**A psychological pandemic brews (The Tribune: 20200723)**


A sudden increase in deaths recently by suicides due to coronavirus-related trauma is worrying health experts and researchers, who are grappling with causative factors pushing people into extreme situations.

Covid-19-induced lockdowns and fears have triggered a full blown psychological pandemic across the country pushing people into spaces and situations they have never seen before.

With cases still peaking, the incidence of suicides due to fear of contracting the virus or succumbing to it, besides social stigma and sense of entrapment during lockdowns is witnessing a slow but progressive surge.

Conservative estimates by researchers attribute more than 100 recent deaths in India to Covid-related trauma, a trend that has led the Ministry of Health to issue detailed guidelines on mental health during the pandemic.

Most of these deaths have, tragically, been by suicide, the latest involving a Madhya Pradesh resident Rajmani Sattar, who hanged himself in the washroom of AIIMS Trauma Centre this Thursday. Sattar was not a Covid patient but had been under prolonged hospitalisation for a chronic condition. He was away from his family and friends due to Covid-related restrictions.

Not too long before Sattar’s demise, a 37-year-old journalist Tarun Sisodia on Covid management at AIIMS died of suicide after jumping off the fourth floor of the hospital. Sisodia’s death sent shockwaves across the media world leading to demands for a judicial probe into the circumstances of his death. An internal AIIMS enquiry ruled out malafide but Health Minister Harsh Vardhan nevertheless ordered the replacement of hospital trauma centre in charge.

With deaths by suicides rising amid the exploding pandemic, experts are grappling with causative factors that are pushing people into extreme situations.
Some studies have shown the virus not only damages the lungs, it also impacts the brain adversely, besides harming other organs.

“Researchers have now found that Covid-19 could trigger changes in the central and peripheral nervous system of those infected. Preliminary evidence suggests the disease can cause serious brain damage, even in mild patients. Psychiatric manifestations of Covid-19 involve hallucinations and delirium among others. It’s an evolving field because the disease is only six months old,” leading psychiatrist Ashish Pakhre says.

Pakhre also warns of a condition mental health experts call Werther Effect that has set in since actor Sushant Singh Rajput died of suicide in his Mumbai home.

“Werther Effect exemplifies the contagious nature of suicide. When a celebrity passes away by suicide, he can trigger similar episodes in local communities pushing people, who are on the brink, to take their lives. We have seen many suicides after Rajput’s death and need to watch out for signs of depression in youngsters. Changes in moods and behaviour patterns that last over two weeks should constitute alarming signs for anyone. People must remember that depression is not in the head. It is a medical condition which needs treatment,” Pakhre said.

At least eight youngsters across India, most of them fans of Rajput, died by suicide after the actor passed away.

Covid-induced suicides also continue unabated. In mid-June an IRS officer in Delhi killed himself fearing he might infect his family with Covid. The officer turned out to be Covid-19 negative.

Earlier this March, a young Covid-19 suspect jumped off the seventh floor of Delhi’s Safdarjung Hospital and died.

India’s first Covid-related suicide was reported much earlier on February 12 from South India where a 50-year-old man mistook seasonal flu symptoms to be Covid-19 and committed suicide.

The psychological pandemic triggered by Sars-Cov2 virus is not specific to any one nation. It is global.

Such has been its impact that the WHO had to, on July 2, call upon countries to pay greater attention to mental health and suicide prevention.

“Hitting lives and livelihoods, the pandemic is causing fear, anxiety, depression and stress among people. Social distancing, isolation and coping with perpetually evolving and changing information about the virus has both triggered and aggravated existing and pre-existing mental health conditions, which need urgent attention,” WHO Southeast Asia Regional Director Poonam Khetarpal says.

The WHO acknowledged that stigma related to Covid-19 infection might lead to feelings of isolation and depression, impacting mental health.
Another precipitating factor the world health body recently flagged to member nations is the rising cases of domestic violence during the pandemic.

Domestic violence is reported to have increased during lockdowns imposed by almost all countries in the Southeast Asia Region of the WHO, Khetarpal says urging early identification of mental health conditions, recognition of suicidal behaviours and appropriate management through a multi-sectoral approach even as the world continues to focus on arresting further spread of the pandemic.

Suicide claims almost 8,00,000 lives every year globally and is the leading cause of death among young people aged 15-29 years of age, global health statistics show.

There is also evidence to suggest that for each adult who dies of suicide, there are more than 20 others attempting suicide.

The WHO South-East Asia Region of 11 nations, including India, accounts for 39 per cent of the global suicide mortality and is among the most vulnerable to mental health pressures Covid-19 is exerting.

India alone, on an average, accounts for around a third of global suicides, among women and a fourth of suicides among men.

Covid-19-related suicides, however, remain a global marker. The most high-profile suicide linked to the pandemic has involved Thomas Schaefer, the finance minister of Germany’s Hesse state, who killed himself amid worries over coping with the economic fallout of the Covid crisis.

At least eight youngsters across India, most of them fans of Rajput, died by suicide after the actor passed away. This was in stark reminiscence of the 1974 phenomena noted sociologist David Phillips documented in his studies on the infectious nature of suicides. Phillips found that when British and American newspapers ran a front page story about a suicide, the number of such deaths in the neighbourhoods increased immediately afterwards. He called the phenomenon Werther Effect, which led to the WHO issuing guidelines on responsible reporting of suicides.
**HCQ, chloroquine**

**HCQ, chloroquine do not show antiviral effect against coronavirus, studies reveal (The Tribune: 20200723)**


Using antimalarial drug in combination with azithromycin had no notable effect on virus levels

**Photo for representation**

Chloroquine and hydroxychloroquine, either alone or in combination with the antibiotic azithromycin, do not show any notable antiviral effect against infections with the novel coronavirus in macaques or human lung cells, according to two new studies in the journal *Nature*.

Hydroxychloroquine (HCQ) and chloroquine, two drugs, commonly used for the treatment of malaria, have been investigated for their potential to treat COVID-19 in more than 80 registered clinical trials, and have been shown to inhibit the novel coronavirus, SARS-COV-2 infection in cell cultures, the scientists said.

However, they said, the effectiveness of these drugs in the treatment of patients with COVID-19 has been debated.

In one of the studies, scientists, including Roger Le Grand from the French National Institute of Health and Medical Research, assessed the effects of HCQ treatment in cynomolgus macaques, a non-human primate model of SARS-CoV-2 infection in humans.

They found that HCQ showed no substantial antiviral activity, regardless of the timing of treatment initiation, either before infection, soon after infection, or late after infection.

According to the study, using the antimalarial drug in combination with azithromycin, an antibiotic, had no notable effect on virus levels in the macaques either.

In the other study, Stefan Pohlmann and his colleagues from the Leibniz Institute for Primate Research in Germany found that chloroquine has no antiviral activity against SARS-CoV-2 in human lung cells.

They explained that in previous experiments, the cells which were used to demonstrate a positive effect for chloroquine did not have an enzyme that is normally present in human lung cells and facilitates the entry of SARS-CoV-2.
The scientists who conducted this study emphasised the importance of using cell lines which mimic human lung tissue in studies that assess the activity of drugs against SARS-CoV-2.

According to the scientists, these results do not support the use of hydroxychloroquine and chloroquine for the treatment of patients with COVID-19. — PTI

**Immunity drops**

**New study show immunity drops quickly in mild Covid-19 cases (The Tribune: 20200723)**


New study show immunity drops quickly in mild Covid-19 cases

A study shows that in people with mild COVID-19 cases, their antibodies against the coronavirus drop sharply over the first three months after infection.

A research team at the University of California, Los Angeles, did an in-depth study of 34 people who had recovered from mild COVID-19 infections. They tested their blood two or three times over three months, Xinhua news agency reported on Tuesday.

The researchers found a rapid drop in antibodies - the immune system proteins that help stop viruses from infecting cells in the body. On average, the antibody levels fell by half every 73 days, according to the study published in The New England Journal of Medicine.

The findings raise concern that humoral immunity against SARS-CoV-2 may not be long lasting in persons with mild illness, who compose the majority of persons with COVID-19, said the study.

Further studies will be needed to define a quantitative protection threshold and rate of decline of antiviral antibodies beyond 90 days, according to the study. — IANS
There was talk of immunity passports as early as late March, when the Sars-Cov2 virus which causes the coronavirus disease was raging through Europe (Dispatch 18, on April 5, wrote about them). Back then, the thinking was that these passports would be issued on the basis of antibody tests — with anyone with antibodies for Covid-19 being eligible for one. These people, the argument went, could move around, work, travel, and help cities and countries get back on their feet because they couldn’t get infected.

The idea was never implemented because researchers could not answer how long the antibodies or immunity (the two aren’t necessarily the same, but we will come to that shortly) would last. A recent study by researchers at the David Geffen School of Medicine, Los Angeles, may have the answer — Covid-19 antibodies have a half-life of 73 days, lower than the two years that antibodies for Sars-Cov-1 (which causes the Severe Acute Respiratory Syndrome) last. The two numbers are not directly comparable, but the difference is clearly there and significant. The study covered only 34 patients (and all standard caveats that apply to research based on a sample that small, do). The researchers also did not study what happens to the antibodies after 90 days, but admit that there is a chance the “decay will decelerate”.

The study’s finding — published in the New England Journal of Medicine — isn’t very different from another recent study published in pre-print server medRxiv by researchers from Kings College, London that found that Sars-Cov2 antibodies peak three weeks after infection, and then decline, with levels almost approaching the baseline in some cases in as little as two months. This sample size for this study was around 90 people including 64 patients.

But these studies do not necessarily mean any immunity we develop to Covid-19 is transient. That’s because of T-cells (on which, suddenly, everyone seems to be an expert).

According to recent research at the Karolinska Institute and the Karolinska University Hospital in Sweden, twice as many people who have antibodies that fight Covid-19, have T-cells that target cells infected by the disease — which means the actual immunity in a population is higher than that measured by antibody tests. The researchers called this T-cell mediated immunity.

If true (the study sampled around 200 people), this would mean that in Delhi, for instance, where a sero survey (blood test) found that 22.86% of a randomly selected sample of around 21,000 people had antibodies, the actual level of immunity could be much higher, perhaps as much as 45%, a little over the 43% a study by the universities of Stockholm and Nottingham
came up with as the herd immunity baseline for Covid-19. That could explain a lot of things — including why the number of daily cases started declining in the Capital.

This column wondered sometime back whether there was a peak infection rate after which the spread of the disease started declining. If the Swedish study holds, it could mean that the prevalence or infection rate itself is perhaps much higher than what is measured using antibody tests.

Indeed, T-cells are emerging as the real heroes of the pandemic. According to another recent study by Duke-National University of Singapore Medical School, Singapore’s National Centre for Infectious Diseases, and others, Sars-Cov2 generates specific T-cells and, more importantly, coronaviruses such as this one activate T-cells with long-lasting memory. For instance, the study found that people who were infected by Sars in 2003, and recovered, still have T-cells specific to Sars-Cov1, and that these T-cells actually help protect them from Sars-Cov2. The researchers said that this cross immunity, as they termed it, could explain why some people are either immune already, or react to the infection differently from others (for instance, they might not infect others, or the intensity of infection could be lower).

In essence, if all these studies hold, while the antibodies specific to Covid-19 might not last long, the number of people who are immune is actually higher than the number of those who have antibodies because of T-cells, which, it emerges, continue to be produced long after the infection in the case of coronaviruses.

I would treat that as really good news.

**COVID-19**

**City to conduct sero survey every month**

**COVID-19: Findings will define extent of spread, calibrate response to the pandemic**

[https://epaper.hindustantimes.com/Home/ArticleView](https://epaper.hindustantimes.com/Home/ArticleView)

A new citywide blood sampling will be carried out in the first five days of every month beginning in August, Delhi’s health minister Satyendar Jain said on Wednesday, announcing a regular survey to determine how much further Covid-19 may have spread in the Capital – a strategy that could show how close the city is to achieving herd immunity and whether it needs to tweak its response measures.

The announcement came a day after the National Centre for Disease Control (NCDC) released results from the first such surveillance – known as a serological study – showing that 22.86% of 21,387 people who were tested showed signs of being exposed to the virus.
“Sero survey identifies people who have recovered from the disease. The 23% result of the previous survey is most likely to be people who got infected around mid-June, because antibodies take around 15 days to develop. It has been more than a month now. The government plans to make it a monthly exercise. We shall be doing the next sero survey between August 1 and 5,” Jan said.

The figures from the NCDC report, if extrapolated, could mean that over 4.5 million people -- or nearly 1 in every 4 - have had the disease and recovered till June end, manifold more than the 126,323 confirmed till Wednesday. They also suggest that the disease kills only 0.07% of people infected, as opposed to the 2.94% fatality rate in the city.

The findings led experts to conclude that the peak of infections in the Capital was definitely over. “The biggest silver lining is that if we have such high population that was exposed in the past but did not largely display serious symptoms or succumbed -- then it is as good as a vaccine,” Dr Sujeet K Singh, director, NCDC, told HT on Tuesday.

But, experts maintain that there is no room for complacency and people need to continue with precautionary measures such as social distancing and wearing masks.

Epidemiologists believe an infection prevalence rate of 40-65% in a particular population could be adequate to reach a level known as herd immunity, when the number of people who have never had the disease (and are not protected by antibodies that infected people build) dwindle to such an extent that an infectious disease dies out due to a lack of vulnerable hosts.

Jain, when asked about herd immunity by reporters he was interacting with, said even experts differ on this concept. “Usually, it is perceived as a stage when around 40% to 70% people have recovered from the disease. We cannot comment on herd immunity at this stage. We will get a better picture of that after the numbers of fresh cases stop emerging,” he said.

The minister added that “there definitely was spread in the community”. “Whether one can call it community spread is a very technical thing as per the guidelines and protocols that are followed,” he said, asking people to remain cautious.

“Around 77% of people are still vulnerable and we cannot be complacent. We should be serious about maintaining social distance, wearing masks and washing our hands regularly.”

According to Jain, the protocol for the new surveys is still being finalised. “We are chalking out a strategy. It will be spread across the city, cover both containment zones and normal areas, include individuals of different age groups and the sample size will not be less than the previous survey,” he said.

Officials in the health department, who asked not to be named, said the survey will be carried out by district surveillance teams and health department officials between the 1st and 5th of every month.

The teams will fan out across neighbourhoods from where they will pick out people according to the stratification they need to follow, varying samples by age, gender and locality to
represent as random a set as possible, this person said. The tests will be done through the Covid Kavach kit developed by Gujarat-based Zydus Cadila.

NCDC, which carried out the previous survey on behalf of the Delhi government, is unlikely to be involved this time. The local teams carrying out the process will report to the district magistrates.

“The sero surveys need to be repeated periodically to be able to establish a trend with respect to the disease spread. When ICMR approved antibody (blood) testing, it had advised all states to conduct sero-surveillance using the test from time to time to get a sense of how the disease has spread within the community. This is to be done by states and the Centre will pitch in if they require assistance, especially those with high disease burden,” said a Union health ministry official, requesting anonymity.

Dr Lalit Kant, the former, former head of epidemiology and communicable diseases department in the Indian Council of Medical Research (ICMR), said: “Sero-survey done periodically can help the government focus their efforts – both in terms of speed and scale – in protecting the population still vulnerable to exposure to the Sars-CoV-2 virus.”

“As far as the sample size is concerned, it is determined through a formula that primarily depends on prevalence rate of the disease. In Delhi, the prevalence rate has gone up, so the sample size for the upcoming survey is likely to be higher,” he added.

Experts cautioned that Covid-19 still is scantily understood, especially with how it can lead to no symptoms in large proportions of the infected population, and that antibody testing in itself was a complicated process due to the way the virus behaves.

“We are dealing with a new virus here and there is a lot of unknown. For instance, at this juncture, we do not know how long antibodies would stay in the human body after recovery from Covid. That is what makes trend analysis important,” said Puneet Misra, professor of community medicines in the All India Institute of Medical Sciences (AIIMS) Delhi.

“Methodology and sample selection will play a crucial role in the upcoming sero-surveys and the government should consider involving experts and specialists in this regard,” he added.

**Sickle cell disease**

**Sickle cell disease: Cannabis may improve pain-related mood (Medical News Today: 20200723)**

A new study has found that cannabis may improve the mood of people who experience chronic pain from sickle cell disease.

Emerging evidence suggests that cannabis help people with sickle cell disease cope with pain.

New research suggests that cannabis may help improve the mood of people with chronic pain from sickle cell disease. This proof of principle study also found that cannabis was a relatively safe intervention.

The research, published in the journal JAMA Network Open, paves the way for future studies to verify the initial findings and expand the investigation on cannabis-based interventions on chronic pain.

According to the Centers for Disease Control and Prevention (CDC), sickle cell disease is a type of red blood cell disorder that causes the cells to become misshapen and look similar to the crescent shape of a sickle.

Sickle red blood cells die sooner than normal cells, which means less oxygen is transported throughout a person’s body. Furthermore, sickle cells tend to clog smaller blood vessels, resulting in acute or chronic pain, infection, and other serious cardiovascular issues.

According to the CDC, treatments for mild pain from sickle cell disease include over-the-counter analgesics, such as ibuprofen and aspirin.

For people in more severe pain from this condition, doctors can often prescribe daily opioid medications, such as morphine. However, opioids come with various side effects and risks, including addiction and overdose.

Consequently, it is important to find other ways of managing the pain associated with sickle cell disease.

Addressing a research gap

In the United States, cannabis is increasingly popular as an analgesic. It is legal for medicinal use in 33 states, as well as the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands.

Cannabis use as an analgesic has been found to have the best evidence base compared to its use for other interventions. However, the authors of this study note that there are relatively few human studies that explore the use of cannabis as a treatment for pain from chronic health conditions.

To address this issue, the authors developed a double-blind, placebo-controlled, randomized proof of principle study. Their aim was to test the hypothesis that cannabis can effectively relieve chronic pain in adults with sickle cell disease, compared to placebo.

The study enrolled participants who had sickle cell disease and were being treated with an opioid analgesic to manage their pain.
Participants were also required to have prior experience of smoking cannabis to ensure they would be able to inhale the medication and would recognize its effects. However, people currently using cannabis were asked to discontinue their use one week before the trial began.

However, the team excluded those who declared themselves to have serious health issues or substance abuse problems.

This resulted in a study group of 27 participants, of whom 23 completed the full trial. They were included in the analysis of the results.

During the trial, participants made two 5-day trips to an inpatient research center that were at least 30 days apart. They inhaled either vaporized cannabis or a vaporized placebo three times a day.

During this period, the researchers assessed participants’ pain levels and the interference of pain in a range of daily activities and mood. Side effects were also monitored.

Reducing the effect of pain on mood

The researchers found that inhaled, vaporized cannabis did not significantly improve the intensity of participants’ experience of pain compared with a placebo.

However, they observed that when participants inhaled vaporized cannabis, the pain interfered less with the participants’ mood.

Finally, cannabis use did not have any significant adverse side effects compared with the placebo.

According to Dr. Kalpna Gupta, Professor of Medicine at University of California Irvine’s Center for the Study of Cannabis and co-lead author of the study:

“These trial results show that vaporized cannabis appears to be generally safe. They also suggest that sickle cell patients may be able to mitigate their pain with cannabis — and that cannabis might help society address the public health crisis related to opioids. Of course, we still need larger studies with more participants to give us a better picture of how cannabis could benefit people with chronic pain.”

This research does have limitations. As a proof of principle study, it only had a small number of participants, meaning that larger studies are necessary to verify its findings.

Furthermore, aside from the short treatment duration, the participants took the vaporized cannabis three times a day during the study. This might not reflect how people typically use medical cannabis to manage their pain.

However, the research findings show promise for the development of new treatments to manage chronic pain.
Medical myths

Medical myths: Does sugar make children hyperactive? (Medical News Today: 20200723)

https://www.medicalnewstoday.com/articles/medical-myths-does-sugar-make-children-hyperactive#An-important-final-word

When children indulge in sugary foods, they turn feral and bounce off every available surface. This is, as most parents can attest, a fact. In this Special Feature, we ask whether this common knowledge holds up to scientific scrutiny.

Does sugar really drive kids wild?

You are at a party, and there are around 20 children, aged 3–6. The noise is deafening and the candy bowls are empty. Screams of joy fill the air as parents marvel at their offspring’s sugar-induced bedlam.

But what does the science say? Does sugar increase the risk of hyperactivity in children? Perhaps surprisingly, the data says “probably not.”

This will come as a surprise to anyone who has attended a gathering of children where sweet treats are available, so let’s dive into the evidence, or lack thereof.

Sugar and hyperactivity in children

The question of whether sugar influences children’s behavior started to generate interest in the 1990s, and a flurry of studies ensued. In 1995, JAMA published a meta-analysis that combed through the findings of 23 experiments across 16 scientific papers.

The authors only included studies that had used a placebo and were blinded, which means that the children, parents, and teachers involved did not know who had received the sugar and who had been given the placebo.

After analyzing the data, the authors concluded: “This meta-analysis of the reported studies to date found that sugar (mainly sucrose) does not affect the behavior or cognitive performance of children.”

However, the authors note that they cannot eliminate the possibility of a “small effect.” As ever, they explain that more studies on a large scale are needed.

There is also the possibility that a certain subsection of children might respond differently to sugar. Overall, though, the scientists demonstrate that there certainly isn’t an effect as large as many parents report.
Are some children more sensitive to sugar?

Some parents believe that their child is particularly sensitive to sugar. To test whether this might be the case, one group of researchers compared two groups of children:

25 “normal” children aged 3–5
23 children, aged 6–10, whose parents described them as being sensitive to sugar

Each family followed three experimental diets in turn and each for 3 weeks. The diets were:

- high in sucrose, with no artificial sweeteners
- low in sucrose, but with aspartame as a sweetener
- low in sucrose, but with saccharin — a placebo — as a sweetener

The study included aspartame, as the authors explain, because it, too, has been “considered a possible cause of hyperactivity and other behavior problems in children.”

All three diets were free from artificial food colorings, additives, and preservatives. Each week, the scientists assessed the children’s behavior and cognitive performance. After analysis, the authors concluded:

“For the children described as sugar-sensitive, there were no significant differences among the three diets in any of 39 behavioral and cognitive variables. For the preschool children, only 4 of the 31 measures differed significantly among the three diets, and there was no consistent pattern in the differences that were observed.”

In 2017, a related study appeared in the International Journal of Food Sciences and Nutrition. The researchers investigated the impact of sugar consumption on the sleep and behavior of 287 children aged 8–12.

The scientists collected information from food frequency questionnaires and demographic, sleep, and behavior questionnaires. A surprising 81% of the children consumed more than the recommended daily sugar intake.

Still, the researchers concluded that “Total sugar consumption was not related to behavioral or sleep problems, nor affected the relationship between these variables.”

Taking the findings together, it seems clear that if sugar does impact hyperactivity, the effect is not huge and does not extend to the majority of children.

Why does the idea persist?

At this point, some readers might be asking, “If there is no scientific evidence that sugar induces hyperactivity in children, why does it induce hyperactivity in my children?” Some of the blame, it is sad to say, may fall on parental expectations.
A study that underlines this point appeared in the Journal of Abnormal Child Psychology in 1994. The researchers recruited 35 boys aged 5–7 whose mothers described them as being behaviorally “sugar sensitive.”

The children were split into two groups. They all received a placebo, which was aspartame. Half of the mothers were told that their children had each received a placebo, and the others were told that theirs had each received a large dose of sugar.

The scientists filmed the mothers and sons as they interacted and were asked questions about the interaction. The authors explain what they saw:

“Mothers in the sugar expectancy condition rated their children as significantly more hyperactive. Behavioral observations revealed these mothers exercised more control by maintaining physical closeness, as well as showing trends to criticize, look at, and talk to their sons more than did control mothers.”

Also, the media plays a part in perpetuating the myth. From cartoons to movies, the term “sugar rush” has entered common parlance.

Another factor is the setting in which a child might be given excess sugar. The classic scenario is a room full of children at a birthday party. In this environment, they are having fun and are likely to be excitable, regardless of the candy consumed.

Similarly, if candy is a special treat, the simple fact of receiving a delicious reward might be enough to generate a boisterous outburst of high-octane activity.

Where did this idea begin?

The health effects of sugar have been discussed widely over the last century. Even today, much research is dedicated to understanding the full details of this sweet chemical’s power over human health.

In 1947, Dr. Theron G. Randolph published a paper discussing the role of food allergies in fatigue, irritability, and behavioral problems in children. Among other factors, he described sensitivity to corn sugars, or corn syrup, as the cause of “tension-fatigue syndrome” in children, symptoms of which include tiredness and irritability.

In the 1970s, sugar was blamed for reactive or functional hypoglycemia — in other words, a dip in blood sugar following a meal — which can cause symptoms such as anxiety, confusion, and irritability.

These were the two prominent theories that underpinned the belief that children’s behavior is negatively impacted by consuming sugar. It is either an allergic reaction or a response to hypoglycemia. However, neither theory is now backed by the data.

Another lay explanation is that sugary snacks cause a brief spike in blood glucose, an effect called hyperglycemia. However, the symptoms of hyperglycemia include thirst, frequent urination, fatigue, irritability, and nausea. They do not include hyperactivity.
In the late 1970s and early 1980s, there was a fresh surge of interest in the sugar–hyperactivity theory. A number of studies appeared to show that children who were the most hyperactive consumed more sugar.

However, these studies were cross-sectional, meaning that they studied one population of children at one point in time. As the authors of the meta-analysis cited above explain, from these findings, it is impossible to know whether sugar causes hyperactivity or whether hyperactivity drives increased sugar intake.

Ongoing research

Since the 1990s, studies looking at hyperactivity and sugar have trailed off, with most experts considering the case closed. In one domain, however, studies have continued.

For the vast majority of children, sugar will not cause hyperactivity, but the jury is still out for one group of youngsters: those with attention deficit hyperactivity disorder (ADHD).

Scientists have approached this topic from two angles; some studies ask whether a high-sugar diet could increase the risk of developing ADHD, while others investigate whether sugar could exacerbate symptoms of ADHD in kids with the condition.

From the first camp of research, a study published in 2011 followed 107 fifth-graders and found “no significant association […] between total volume of simple sugar intake from snacks and ADHD development.”

Looking for longer-term effects, a systematic review and meta-analysis published in the Journal of Affective Disorders in 2019 assessed “evidence of the association between dietary patterns and ADHD.” The authors concluded that “a diet high in refined sugar and saturated fat can increase the risk” of ADHD and that a diet heavy in fruit and vegetables is protective.

However, they acknowledge that the evidence was generally weak. For instance, of the 14 studies that found a relationship between diet and ADHD, 10 used a cross-sectional or case-control design, both of which are observational and can have methodological problems.

Cross-sectional studies cannot tease apart which came first, the cause or the effect, because they determine the prevalence of both at the same point in time.

Case-control studies provide stronger evidence, as they look back into potential causes, or risk factors, after working out who has the health issue in question. The researchers then explore the occurrence of the risk factors in a similar group of people who do not have the health problem.

However, information about potential causes can be affected by memory bias — for example, people with ADHD may be more likely to report that they had a sugary diet because the association is expected.

The authors of the meta-analysis make another important point; there is some evidence that people with ADHD are more likely to binge eat than people without it. This might mean that
increased consumption of foods that activate reward networks in the brain, such as sugary snacks, might be the result of ADHD, rather than a factor that increases the risk of ADHD.

An important final word

Sugar, it seems, does not cause hyperactivity in the vast majority of children. In the future, larger, longer studies might detect a small effect, but current evidence suggests that the association is a myth.

This, however, does not discount the fact that a diet high in sugar increases the risk of diabetes, weight gain, tooth cavities, and heart disease. Monitoring children’s, and our own, sugar intake is still important for maintaining good health.

New Cases

पिछले 24 घंटे में 45 हज़ार से ज्यादा मामलों की पुष्टि, 1129 लोगों की मौत (Dainik Jagran: 20200723)

बता दे कि महाराष्ट्र कोरोना से सबसे ज्यादा प्रभावित है। यहां अब तक 3,37,607 मामले सामने आए हैं। इनमें से 1,37,282 एक्टिव केस हैं और 12556 लोगों की मौत हो गई। वहीं 1,87,769 लोग ठीक हो गए हैं। तमिलनाडु में 1,86,492 मामले सामने आए हैं। इनमें से 1,31,583 एक्टिव केस हैं और 1,31,583 लोग की मौत हो गई हैं। दिल्ली में 1,26,323 मामले अब तक सामने आए हैं। 14,954 एक्टिव केस हैं। 1,07,650 मरीज ठीक हो गए हैं और 3719 लोगों की मौत हो गई है।

कर्नाटक में 75,833 और उत्तर प्रदेश में 55,588 मामले आए हैं।

कर्नाटक में 75,833 मामले सामने आए हैं। इनमें 31,763 एक्टिव केस हैं। 27,239 मरीज ठीक हो गए हैं और 1519 लोगों की मौत हो गई है। अंडhra प्रदेश में 64,713 मामले सामने आए हैं। इनमें 31,763 एक्टिव केस हैं। 823 लोग की मौत हो गई है।

गुजरात में 51,399, पश्चिम बंगाल में 49,321 और तेलंगाना में 49,259 मामले आए हैं।

गुजरात में 51,399 मामले सामने आए हैं। इनमें 37,260 एक्टिव केस हैं। 29650 मरीज ठीक हो गए हैं और 1221 लोगों की मौत हो गई है। पश्चिम बंगाल में 49,321 मामले सामने आए हैं। इनमें 37,260 एक्टिव केस हैं। 29650 मरीज ठीक हो गए हैं और 1221 लोगों की मौत हो गई है। तेलंगाना में 49,259 मामले सामने आए हैं। इनमें 37,260 एक्टिव केस हैं। 29650 मरीज ठीक हो गए हैं और 1221 लोगों की मौत हो गई है।

पिछले 24 घंटे में सबसे ज्यादा तमिलनाडु में 518 लोगों की मौत आई। इसके अलावा महाराष्ट्र में 280, अंडhra प्रदेश में 65, कर्नाटक में 55, पश्चिम बंगाल में 39, उत्तर प्रदेश में 34, दिल्ली में 29, गुजरात में 28, मध्य प्रदेश में 14 और जम्मू और कश्मीर में 10 लोगों की मौत हो गई। यहीं तेलंगाना और झारखंड में नौ हरियाणा में आठ, असम, पंजाब और राजस्थान में छह-छह लोगों की मौत हो गई। ओडिशा में पांच, गोवा और उत्तराखंड में दो-दो और केरल, पुडुचेरी, त्रिपुरा और चंडीगढ़ में एक-एक लोगों की मौत हो गई।
कोरोना के 1227 नए केस आए, 1532 मरीज स्वस्थ

हालात

- दिल्ली में सक्रिय मामले घटकर महज 11.8 फीसदी रह गए हैं।
- 85 फीसदी से अधिक मरीज कोरोना से जंग जीत चुके हैं।

आंकड़ा 126323 हो गया। दिल्ली में अभी तक 107650 मरीज कोरोना से ठीक हो चुके हैं, जहां 3719 मरीजों की कोरोना के कारण मौत हो गई। एक्टिव केस घटकर 14954 रह गए हैं। इनमें से 3342 मरीज अस्पतालों में भर्ती हैं। होम आइसोलेशन में 7966 मरीज हैं।
लॉकडाउन संक्रमण पर लगाम नहीं लगा पाया

400 से ज्यादा गिले अलग या सन्युग्द लॉकडाउन की चोट में आए

लॉकडाउन शामिल के लिए कई समय लॉकडाउन का समय ले रहे हैं। लेकिन, लक्ष्य हैं कि 31 जुलाई तथा 15 जुलाई तक तीन दिन लॉकडाउन लगाया। लॉकडाउन के दौरान देश के अन्य भागों में उन्नति दिखाई है। लॉकडाउन के दौरान देश के अन्य भागों में उन्नति दिखाई है। लॉकडाउन के दौरान देश के अन्य भागों में उन्नति दिखाई है। लॉकडाउन के दौरान देश के अन्य भागों में उन्नति दिखाई है।

विवाद : लॉकडाउन के बाद नहीं आये कोई नियम

लॉकडाउन के बाद नहीं आये कोई नियम

पूर्व : लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

पूर्व : लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

पूर्व : लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

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लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

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लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

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लगाम मान्य बड़े वस्तु में संक्रमण का मान्य

लगाम मान्य बड़े वस्तु में संक्रमण का मान्य
India records highest single-day recoveries (The Hindu: 20200723)


Daily grind: A health worker screening inmates at a building in Mumbai.

28,472 discharged as recovery rate mounts to 63.13%: govt.

India reported its highest ever number of recoveries on a single day, with 28,472 COVID-19 patients having been cured or discharged from hospitals in 24 hours, according to a statement from the Union Health Ministry on Wednesday.

Coronavirus India lockdown Day 120 updates

“With this, the number of patients recovered stands at 7,53,049. This has strongly boosted the recovery rate to 63.13%,” said the Ministry. It said the constantly increasing number of recovered patients had further widened the difference with active cases. “This difference is showing a progressively growing upward trend. While the national recovery rate has improved, 19 States and union territories are posting a recovery rate higher than the national average,” said the Ministry.

Oxygen concentrators
Meanwhile, India on Wednesday received the first tranche of 4,475 oxygen concentrators from the Temasek Foundation, Singapore. The Foundation has offered to donate 20,000 concentrators to India. The remaining concentrators will be received next month and these devices will be made available to States and union territories for use in management of moderate COVID-19 cases.

Minister of State for Health and Family Welfare, Ashwini Kumar Choubey, said these concentrators were helpful in the management of patients classified as moderate cases, who might require low oxygen support.

“They convert atmospheric air to therapeutic oxygen that has a concentration of 90-95%. As the machine obviates the need for transportation and refilling of heavy oxygen cylinders, they can be placed in the wards where such patients are provided care. These machines can be used at COVID Care Centres and railway coaches that have been re-purposed as COVID Care Centres,” he said.

**Covid-19: What you need to know today**

**Covid-19: What you need to know today (Hindustan Times: 20200723)**

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

There was talk of immunity passports as early as late March, when the Sars-Cov2 virus which causes the coronavirus disease was raging through Europe (Dispatch 18, on April 5, wrote about them). Back then, the thinking was that these passports would be issued on the basis of antibody tests — with anyone with antibodies for Covid-19 being eligible for one. These people, the argument went, could move around, work, travel, and help cities and countries get back on their feet because they couldn’t get infected.

The idea was never implemented because researchers could not answer how long the antibodies or immunity (the two aren’t necessarily the same, but we will come to that shortly) would last. A recent study by researchers at the David Geffen School of Medicine, Los Angeles, may have the answer — Covid-19 antibodies have a half-life of 73 days, lower than the two years that antibodies for Sars-Cov-1 (which causes the Severe Acute Respiratory Syndrome) last. The two numbers are not directly comparable, but the difference is clearly there and significant. The study covered only 34 patients (and all standard caveats that apply to research based on a sample that small, do). The researchers also did not study what happens to the antibodies after 90 days, but admit that there is a chance the “decay will decelerate”.

The study’s finding — published in the New England Journal of Medicine — isn’t very different from another recent study published in pre-print server medRxiv by researchers from Kings College, London that found that Sars-Cov2 antibodies peak three weeks after infection,
and then decline, with levels almost approaching the baseline in some cases in as little as two months. This sample size for this study was around 90 people including 64 patients.

But these studies do not necessarily mean any immunity we develop to Covid-19 is transient. That’s because of T-cells (on which, suddenly, everyone seems to be an expert).

According to recent research at the Karolinska Institute and the Karolinska University Hospital in Sweden, twice as many people who have antibodies that fight Covid-19, have T-cells that target cells infected by the disease — which means the actual immunity in a population is higher than that measured by antibody tests. The researchers called this T-cell mediated immunity.

If true (the study sampled around 200 people), this would mean that in Delhi, for instance, where a sero survey (blood test) found that 22.86% of a randomly selected sample of around 21,000 people had antibodies, the actual level of immunity could be much higher, perhaps as much as 45%, a little over the 43% a study by the universities of Stockholm and Nottingham came up with as the herd immunity baseline for Covid-19. That could explain a lot of things — including why the number of daily cases started declining in the Capital.

This column wondered sometime back whether there was a peak infection rate after which the spread of the disease started declining. If the Swedish study holds, it could mean that the prevalence or infection rate itself is perhaps much higher than what is measured using antibody tests.

Indeed, T-cells are emerging as the real heroes of the pandemic. According to another recent study by Duke-National University of Singapore Medical School, Singapore’s National Centre for Infectious Diseases, and others, Sars-Cov2 generates specific T-cells and, more importantly, coronaviruses such as this one activate T-cells with long-lasting memory. For instance, the study found that people who were infected by Sars in 2003, and recovered, still have T-cells specific to Sars-Cov1, and that these T-cells actually help protect them from Sars-Cov2. The researchers said that this cross immunity, as they termed it, could explain why some people are either immune already, or react to the infection differently from others (for instance, they might not infect others, or the intensity of infection could be lower).

In essence, if all these studies hold, while the antibodies specific to Covid-19 might not last long, the number of people who are immune is actually higher than the number of those who have antibodies because of T-cells, which, it emerges, continue to be produced long after the infection in the case of coronaviruses.

I would treat that as really good news.
Dengue and Malaria (Hindustan: 20200723)

https://epaper.livehindustan.com/imageview_211219_86301910_4_1_23-07-2020_2_i_1_sf.html

Faceshiled (Hindustan: 20200723)

https://epaper.livehindustan.com/imageview_211231_73475110_4_1_23-07-2020_14_i_1_sf.html
फेस शील्ड कोविड-19 से बचाव में मास्क जितनी कारगर नहीं

लंडन | एजेंशियां
फेस शील्ड कोविड-19 से बचाव में कारगर नहीं है। ऐसे में इन्हें मास्क के विकल्प के रूप में नहीं अपनाया जा सकता। स्विस रिजर्वर्ड के शोधकर्ताओं ने एलप्स के एक रिजर्व में सामने आए संक्रमितों में वायरस के प्रसार की वजह खंगालने के बाद यह दावा किया है।

उन्होंने यह दावा किया कि फेस शील्ड कोविड-19 में जिन लोगों को कोरोना संक्रमण को फैलने से रोकने के लिए मास्क धारण करना चाहिए, उनके फेस शील्ड पहनने से उनके जोरदार स्वास्थ्य कोरोना संक्रमण के शिकार हुए।

दावा

• स्विस रिजर्व में रिजर्व में सामने आए संक्रमितों पर अध्ययन से खुलासा।
• मास्क पहनने के बावजूद कर्मचारियों को कोरोना संक्रमण को रोकने की कोशिश की जा रही थी, जिसके प्रति यह दावा किया गया है।

वहाँ, जिन लोगों ने मास्क धारण कर रखा था, उनमें बायरस नहीं फैला। मास्क पहनना यह दावा भी स्वास्थ्य की रोकथाम में उत्तराधिकारी को कारगर मिला, जितना मास्क शील्ड के साथ।

SARSCove-2(Hindustan: 20200723)
https://epaper.livehindustan.com/imageview_211231_73477304_4_1_23-07-2020_14_i_1_sf.html
साधारण प्रयोगशाला में कोरोना की कुंडली खंगाली जा सकेगी
लैब में सार्स-कोव-2 का हमशक्ल तैयार किया

हाइब्रिड वायरस के फायदे
• वैज्ञानिक वैज्ञानिक आवश्यकता दरा कर पाएगा
• प्राथमिक टीके का परीक्षण भी बना आसान हो जाएगा
• कोरिंड-19 से उत्पन्न वाले बीमारियों में बन करने को प्रयास एंटीबॉडी है या नहीं, पता चलेगा

खतरनाक स्पाइक प्रोटीन को बेहतर किया
शोधकर्ताओं ने एक अंग्रेजी हाइब्रिड वायरस में मौजूद जीन की जगह कोरिंड-19 का स्पाइक प्रोटीन प्रदायोगिक किया। नया वायरस में कोरोना की तरह कोरोना को तत्कालिन तो किया और एंटीबॉडी की नजरों में भी आया यह जानकारी।

टीका बनाने की तैयारी तेज़ी से शुरू
अमेरिकी वैज्ञानिक हाइब्रिड वायरस के टीका बनाने के लिए जारी होने पर परीक्षण कर सरल हो जाता है। वाशिंग्टन दूर-विदेशों के प्रोफेसर गाईल डायमंड ने बताया कि हाइब्रिड वायरस के आगे विकास के इर के लिए टीका, प्रभावशाली प्रयोग करने और वायरस के लिए बच्चों और लोगों को टीका दे सकता है।

Poster stand (Hindustan: 20200723)
https://epaper.livemodern.com/imageview_211231_73474156_4_1_23-07-2020_14_i_1_sf.html
ऐसे जानें खाड़े होने का तरीका सही है या नहीं

क्या आप पीत और काजर दर्द की समस्या से प्रतिशोधान हैं? अगर हो तो गलत मुद्रा ने सक्षम बनाना इसको बढ़ी जगह ही सक्षम है। ऑस्ट्रेलिया की जानी-जानी व्यायाम विशेषज्ञ निकॉली हेल ने इस के बाद जालिया दिनांकित पर 45 सेकंड का बीडीवोल साज्जा कर कुछ आसान उद्योग सुझाई है, जिनकी मदद लोग घर में पहले पहल लगायी है कि वे जगह भी बुकेचर या तबल कर तो रही रहें। हेल ने ऐसे देखा और बेचने की बुरी में सुधार लाने से मददगार कुछ व्यायाम भी बताई है। आइए इन पर नजर आले-

गलत मुद्रा के पांच खतरे

1. मानसिकता और अभ्यास (विगतिक) में क्षति की शिकायत
2. रीढ़ के जोड़ों के बीच का अंतर घटने से नस्ल के दवाने की समस्या प्रकट होती है
3. पीठ, कमर, घुटनों में आसानी दर्द के साथ कार्यवाही का खतरा बढ़ जाता है
4. योगोत्सव डिस्क्स्ड्राउजन (रीढ़ के निम्नलिखित हिस्सों में मीजूज जोड़ों की चलन विगतिक) का शिकार हो सकता है यहां
5. गलत मुद्रा के मनोवैज्ञानिक प्रभाव भी होते हैं, जिनमें अव्यवस्था में इसे आत्मविश्वास में कमी का संकेत करता है।

दूसरा लागू करने हो रही चौक

- फर्श पर दस से 20 सेकंड के लिए ढूंढ उसी तरह से खड़े हो जाए। इस दौरान ध्यान दें कि आपके कुछ को मांसपेशियों में दबाव तीन महसूस हो रहा है। अगर हो तो समझ जाए कि दीर्घ को सहारा देने के लिए बनीं निम्नलिखित हिस्से की मांसपेशियों ढूंढ से काम नहीं कर रही है।

सेवा व्यायाम के फायदे

1. हिप एवं टेंसरशीन
   - एडी के ऊपर दोनों पैरों के पिल्लियों में बलवर्धक व्यायाम से अंतरमें की भारी नोक हो जाए। इसके बाद बाह्य पैर विशेष रखें, जितना रहे सके दाएं पैर को उस पल बढ़ाएं।

2. पैरब्रीकेशन
   - जमीन पर सांठें विशेष रूप से बुड़े लटक जाएं। अब दोनों पैरों को बुड़नों के पास से मौजूद। पैरों के बीच क्षम से कम एक फीट का पालतू रखें। अब दोनों हाथों से एडी के पिल्लियों को बढ़ाएं और फिर कमर व घुटनों के हिस्सों को ऊपर उठाएं।

3. छातरवाद लंबाई
   - फर्श पर सीधे खड़े हो जाएं। दोनों हाथों को कमर पर रखें। अब दोनों पैरों से कमर व घुटनों के हिस्से को निकाल उठाएं।
Digestive System

पाचन स्वास्थ्य को बेहतर करके क्या रोग प्रतिरक्षा प्रणाली को मजबूत किया जा सकता है? (Dainik Jagran: 20200723)


हमारा रोग प्रतिरक्षा प्रणाली एक जटिल व्यवस्था है तथा यह हमारे पाचन स्वास्थ्य से निरंतर प्रभावित होती है। पाचन तंत्र तथा रोग प्रतिरक्षा प्रणाली का एक दूसरे से निकट संबंध है।

कोरोना महामारी के वर्तमान परिस्थिति में हमारी रोग प्रतिरक्षा प्रणाली किसी भी संबंधित संक्रमण के विस्तृत प्राथमिक रूप से प्रभुत्व बन गई है। वर्तमान में ऐसे बहुत से स्वच्छन्द आम्यात्र हैं, जो महामारी को फैलने से रोकने के लिए बहुत महत्वपूर्ण बन गए हैं। जैसे विषाणु (Virus) के वाहिक आक्रमण से खुद को बचाना है, उसी तरह विषाणु से बचाव के लिए अपनी रोग प्रतिरक्षा प्रणाली को अंदर से मजबूत करना भी जरूरी है। कोरोना विषाणु के निरंतर फैलने के विस्तृत हमारी रोग प्रतिरक्षा प्रणाली ही सरलतम अटकाय तथा बुद्धिमत्ता की है।

हमारा रोग प्रतिरक्षा प्रणाली एक जटिल व्यवस्था है तथा यह हमारे पाचन स्वास्थ्य से निरंतर प्रभावित होती है। हमारी आंत्र प्रणाली (Digestive System) अनेक सूक्ष्म जीवाणुओं का घर है, जो हमारी रोग प्रतिरक्षा प्रणाली के स्वास्थ्य को विनियमित करने में महत्वपूर्ण भूमिका निभाते हैं। हाल के अध्ययनों में यह सिद्ध किया गया है कि हमारी आंत्र प्रणाली में रहने वाले सूक्ष्म जीव तथा फेफड़े के रोगों के बीच एक संबंध है। कुछ अध्ययनों ने यह पाया गया है कि हमारी प्रतिरक्षा प्रणाली का एक बड़ा हिस्सा हमारी जठरांत्र संबंध भूमिका निभाते हैं। जन्म बृहत्तात्विक वैज्ञानिकों का मत है कि आंत्र प्रणाली में रहने वाले सूक्ष्म जीवाणुओं का संचयन तथा पोषण तथा अपने पाचन स्वास्थ्य की देखभाल से इस महामारी के विस्तृत हमारी रोग प्रतिरक्षा प्रणाली के प्रादाहिक प्रतिक्रिया (Pro-Inflammatory Reactions) को नियंत्रित जा सकता है।

पाचन स्वास्थ्य तथा रोग प्रतिरक्षा तंत्र के बीच अपशंसक संबंध

अनुसंधान के द्वारा यह अब एक सुस्थापित तथ्य है कि पाचन तंत्र तथा रोग प्रतिरक्षा प्रणाली का एक दूसरे से निकट संबंध है। ऐसे प्रमाण लगातार मिलते जा रहे हैं, जिससे इस अंतर्गत यह और पृथ्वी हो रही है तथा स्वास्थ्य विशेषज्ञ अब यह मानने लगे हैं कि हमारा स्वास्थ्य तथा प्रसन्नता हमारी जठरांत्र
प्राणाली के स्वस्थ होने पर निर्भर करता है। वास्तविकता यह है कि हमारे स्वास्थ्य का हर पहलु इस बात पर निर्भर करता है कि हम अपना भोजन कितनी अच्छी तरह पचा पाते हैं तथा हमारे भोजन के प्रति हमारी शारीरिक और मानसिक प्रतिक्रिया हमारी मनोदशा, व्यवहार, ऊर्जा-स्तर, शारीरिक वजन, भोजन लालसाएं, अंत-श्रावों (Hormone) के संतुलन, हमारी रोग प्रतिरोधक शक्ति तथा सम्पूर्ण स्वास्थ्य से जुड़ी हुई है।

पाचन तंत्र तथा रोग प्रतिरक्षा तंत्र - एक संक्षिप्त परिचय

हमारे पाचन तंत्र में मूंग से लेकर बडी अंत तक सभी अंग शामिल होते हैं, जो भोजन के अंतर्गत तथा भोजन से पाणी तथा अन्य पोषक तत्वों के अवशेषण में सहायता करते हैं। पाचन तंत्र के अपने सर्वत्र से निम्नतर स्तर पर कार्य करने की स्थिति में दस्त, कबज, सूजन, अम्लता, संक्रमक तथा रोग प्रतिरोध प्राणाली के स्वयं के विस्तृत प्रतिक्रिया के कारण होने वाले रोग हो सकते हैं।

हमारी रोग प्रतिरक्षा प्राणाली संक्रमणों से लड़ने तथा हमें रोगों से सुरक्षित रखने के लिए उत्तरदायी है। हमारी रोग प्रतिरक्षा प्राणाली अनेक ग्रंथियों, विभिन्न प्रकार की कोशिकाओं तथा बाहरी रोगकारी आक्रामकों के विस्तृत प्रतिक्रिया को उद्दीपित करने वाले रसायनिक कारकों से मिलकर बना है।

पहले इन्हें स्वतंत्र इकाइयां समझा जाता था, परंतु अब इन्हें एक अंतर्संबंधित प्राणाली के रूप में देखा जा रहा है। इनमें से किसी भी एक प्राणाली के अपने सर्वत्र से निम्नतर स्तर पर कार्य करने की स्थिति में आपस में जुड़ी अन्य प्राणालियों भी बेकार हो सकती हैं।

जठरांश्य रोग प्रतिरक्षा तंत्र- रोग प्रतिरक्षा तंत्र का नवजात भाग

लसीका ऊतक (Lymphoid tissues) तथा लसीका ग्रंथियां (Lymph nodes) हमारे रोग प्रतिरक्षा तंत्र के महत्वपूर्ण अंग हैं तथा यह हमारी हमारी जटर तंत्र की श्लेष्मा झिलिमियों में बहुतायत से स्थित होती हैं। इनमें अनेक प्रकार की रोग प्रतिरक्षा कोशिकाएं पाई जाती हैं जिनमें टी-कोशिकाएं, लाम्बः कोशिकाएं, मास्ट कोशिकाएं, डेड्राइटिक कोशिकाएं तथा माइक्रोफेज शामिल हैं। इन्हें सामूहिक रूप से पाचन तंत्रीय लसीका ऊतक (gut-associated lymphoid tissue (GAIT) कहा जाता है। वास्तविकता यह है कि पाचन तंत्र में उपस्थित लसीका कोशिकाओं की संख्या प्लीन (SpIeen), जो एक लसीका ग्रंथि है, में पाई जाने वाली लसीका कोशिकाओं की संख्या के लगभग समान होती है। इसके अतिरिक्त, पाचन तंत्र की श्लेष्मा झिलिमियों को, जिन्हें पहले सिर्फ अवशेषों कोशिकाओं से निर्मित समझा जाता था, अब रोग प्रतिरक्षा तंत्र के एक महत्वपूर्ण अंग के रूप में जाना जाता है। जठरांश्य तंत्र प्रतिदिन भोजन के साथ आने वाले अनेकों संभावित हानिकारक रोगाणुओं का सामना करता है। रोगाणुओं से ये मृदंगकर रोग प्रतिरोधक
कोशिकाओं को परिपक्व होने में सहायता करती है और समय के साथ जब ये रोग प्रतिरोधी कोशिकाएं शरीर की अन्य प्रणालियों में प्रतिस्थापित हो जाती हैं, तो ये कोशिकाएं किसी भी अन्य रोगाणु आक्रमण के विरुद्ध प्रभावी रोग प्रतिरोधक प्रतिक्रिया दे सकती हैं। इसके अतिरिक्त, जठरांशीय मार्ग में स्थित रोग प्रतिरोधी कोशिकाएं भोजन के साथ शरीर में प्रवेश करने वाले रोगाणुओं तथा बाहरी कारकों के संवर्धन को रोकती हैं।

जठरांशीय सूक्ष्म-जैविकी

हमारी आंतों में जीवाणु, कवक तथा विषाणुओं की बहुसंख्या उपस्थित रहती है जिसे हम जठरांशीय सूक्ष्म-जैविकी के रूप में जानते हैं। आवश्यक विटामिनों के संशोधन तथा पाचन में सहायता के अतिरिक्त ये हमारे रोग प्रतिरोध तंत्र को भी प्रभावित करते हैं। जठरांशीय सूक्ष्म-जैविकी के जठरांशीय मार्ग में विशिष्ट गुणसूत्र, जिनमें कि पोशाक तत्त्वों के अवशोषण, ऊत्स प्राप्त तथा उसके महत्वपूर्ण रूप से रोग प्रतिरोध में शामिल गुणसूत्र शामिल हैं, कि अभिव्यक्ति को भी प्रभावित कर सकती है।

किसी भी प्रभावी रोग प्रतिरोधी प्रणाली का मुख्य लक्षण यह है कि यह अंग दीर्घ की सामान्य कोशिकाओं तथा रोगकारक सूक्ष्म जीवों में विभेद कर सके तथा उन्हें पृथक करने के लिए उन्हें पृथक कर देने के लिए उन्हें धूली तथा उस अभिव्यक्ति के अवशोषण, ऊत्स प्राप्त करने में सहायता करते हैं। इस प्रकार आंतों में उपस्थित सूक्ष्म जीवों के बीच का नाजुक संतुलन हमारी रोग प्रतिरोध क्षमता को बढ़ाने में सहायता करता है।

यह सर्वजन है कि प्रत्येक व्यक्ति की आंत प्रणाली का सूक्ष्म जैविकी अलग होती है तथा यह आंत प्रणाली को स्वस्थ रखने में सहायता करती है। यह कहने की अवश्यकता नहीं है कि हमारे भोजन का हमारी आंत प्रणाली के सूक्ष्म जैविकी पर ही गहन प्रभाव पड़ता है। हमारा भोजन इन जीवाणुओं के लिए लाभदायक भी हो सकता है। परंतु कुछ कारक जो भोजन इन नाजुक जैविक पर्यावरण को हानि भी पहुंच सकते हैं।

वास्तवतः यह है कि हमारी आंत प्रणाली में मौजूद विशिष्ट जीवाणु प्रजातियों के मध्य संतुलन हमारी रोग प्रतिरोध प्रणाली को प्रभावित कर सकता है।

आंतों के सूक्ष्म जैविकी को प्रोबायोटिक्स तथा आंतों के अवशिष्ट पदार्थों से संलेखित जीवाणुओं के प्रतिस्थापन भव्यता के कई गंभीर स्वास्थ्य अवस्थाओं जैसे कि क्षयकारी तथा तीन संक्रामक
अतिसार, जीवाणुरोधी औषधियों के कारण होने वाले अतिसार तथा वेटिलेटर से होने वाली निमोनिया की चिकित्सा मेंलाभकारी पाया गया है।

मजबूत रोग प्रतिरक्षा प्रणाली के लिए स्वस्थ आंत प्रणाली है आवश्यक।

यह सर्वात स्वस्थ है कि आंतों की स्वस्थ जैविक प्रतिरोधक व्यक्ति मेंअलग होती है तथा यह आंतों के स्वास्थ्य के लिए आवश्यक है। इसलिए, अच्छे नबायप्रस क्षूष्ण जीवाणुओं की वृद्धि आंतों को स्वस्थ रखती है।

ऐसे बहुत से खाद्य पदार्थ हैं जो आंतों तथा सम्पूर्ण स्वास्थ्य में वृद्धि करते हैं। इनमें ताजे पॉलिफेर, सब्जियां तथा रेशमिये खाद्य जैसे बीजन शामिल हैं; आंतों में नबायप्रस स्वस्थ जीवों के संबंध में सहायता करते हैं। कियानीकृत (Fermented) खाद्य तथा प्रकाशोपक का प्रयोग आंतों में नबायप्रस स्वस्थ जीवों को बढ़ावा देने मेलाभकारी है। प्रकाशोपक की अच्छी मात्रा का सेवन भोजन असाह्यता (Food Allergy) से होने वाले संक्रमणों को कम करने मेंसहायता करता है। हालांकि, प्रकाशोपक के प्रयोग के स्वास्थ्य पर प्रभाव के संबंध में अभी अनुसंधान शुरू ही हुआ है। इसके ठीक विपरीत, परिश्रमित और तल्ल-भुने भोजन आंतों की स्वस्थ जैविक पर बुरा प्रभाव धाल सकते हैं तथा आवश्यक जीवाणुओं के मध्य असंतुलन उत्पन्न कर सकते हैं।

विशेषज्ञ लौग, कोको पाउडर, बेरयां, गरयां तथा सोया जैसे खाद्य पदार्थों के सेवन की भी भावीतांत सकते हैं। वे खाद्य पदार्थ मासिक तथा पॉलिफेरन के में समूद्र होते हैं। जो आंतों की स्वस्थ जैविक को सुधारने में सहायक होते हैं। ये तत्व पाचन प्रणाली को स्वास्थ्य संभव स्थिति मेंबनाए रखने में सहायता करते हैं, जिससे रोग प्रतिरोधक क्षमता में वृद्धि होती है। इसके अतिरिक्त, व्यायाम, पर्याप्त नींद तथा तनाव को नियंत्रित करना भी आंतों के तथा सम्पूर्ण स्वास्थ्य को सुधारने में महत्त्वपूर्ण क्रियाकारिता निभाता है। वैसे आयुवेदिक डाइट या सिरप भी लाभकारी होगा जैसे झंडू पन्यारिश्ट। यह न केवल पाचन प्रतिरोधक क्षमता में वृद्धि करता है, बल्कि अम्लता, गैस, अपच, पेट का फूलना और कब्ज जैसी समस्या को भी दूर करता है।

पाचन तंत्र की समस्या कई प्रकार की असहत्याओं (Allergy), संधिशोक, स्व-प्रतिरक्षा संबंधी व्याधियों जैसे कि असंतोषजनक मलत्याग सिंड्रोम, मुहसंस, जीर्ण थकान, मानसिक विकास में बाधा, मानसिक क्षीणता यहां तक तक कि उनको का अंतिमित्त कारण हो सकता है। वास्तविकता यह है कि विश्व में लगातार बढ़ रही स्व-प्रतिरक्षा संबंधी तथा सूजन-संबंधी व्याधियों का संबंध आधुनिक जीवन शैली के कारण भोजन अभ्यासों में हुए परिवर्तनों से हो सकता है। इसलिए अपनी रोग प्रतिरक्षा प्रणाली को सर्वान्त जािथि में रखने के लिए अपने पाचन स्वास्थ्य का ध्यान रखना तथा जठरांत्रीय स्वास्थ्य के लिए अनुकूल भोजन आवश्यक है।
ऑसफोड यूनिवर्सिटी की वैक्सीन जिसे एजेडडी1222 भी कहा जाता है। यह भी चीन के कैनसिनो बायोलॉजिस्ट की ही तरह की ही वैक्सीन है।

नई दिल्ली, जेनरल। Oxford Coronavirus Vaccine ब्रिटेन की ऑसफोड यूनिवर्सिटी और एस्ट्राजेनेका कंपनी की कोविड-19 वैक्सीन शुरुआती ट्रायल में सुरक्षित और प्रभावी रही है। सीरम इंस्टीट्यूट ऑफ इंडिया के कैनसनो बायोलॉजिस्ट के कहा जाता है। यह भी चीन के कैनसनो बायोलॉजिस्ट की ही तरह की ही वैक्सीन है। इसी तरह के वैसीन अमेरिका के जॉनसन एंड जॉनसन भी एक है, जो वायरस के जेनेटिक इंजीनियरिंग पर भरोसा करती है। यह एडनोवायरस को इस उद्देश्य से पेश करते हैं कि यह प्रतिकृत प्रणाली को प्रेरित करेगा।

इम्यून सिस्टम बाहरी तत्वों को हराने के लिए बनाता हैं एंटीबॉडी: ऑसफोड यूनिवर्सिटी की यह वैक्सीन साधारण सददी के वायरस के कमजोर वर्जन या एडनोवायरस (सीएचएडीओएस) पर आधारित है, जिसके कारण चिपिंजियों में संक्रमण होता है। इसे चिपिंजियों से आए एडनोवायरस से लिया गया है। साथ ही इसकी जेनेटिक इंजीनियरिंग की जाती है, जिससे मानव शरीर में इसकी प्रतिकृत नहीं बनती है।

जब कोरोना वायरस के स्पाइक प्रोटीन के साथ जेनेटिक इंजीनियरिंग सीएचएडीओएस। व्यक्ति को दिया जाता है तो यह स्पाइक प्रोटीन का निर्माण करता है। शरीर का इम्यून सिस्टम इसे पहचानता है और
बाहरी तत्वों को हटाने के लिए एंडीबॉडी बनाना शुरू करता है। पहले और दूसरे चरण के प्राथमिक परिणामों के अनुसार, इंजेक्शन के जरिए इस वैक्सीन की एक खुराक देने के महीने भर बाद 95 फीसद प्रतिभागियों में सार्स-सीओवी-2 वायरस स्पाइड के खिलाफ एंडीबॉडी में चार गुणा की वृद्धि दर्ज की गई। इसके साथ ही सफेद रक्त कोशिकाओं के एक प्रकार टी-सेल याद रखती हैं और कोरोना वायरस पर हमला करती हैं।

वैक्सीन इस तरह करता है काम

कब तक आ जाएगी वैक्सीन: ब्रिटेन में 10 हजार लोगों पर दूसरे और तीसरे चरण का ट्रायल किया जा रहा है, इसके बाद ही वैक्सीन के लाइसेंस के लिए इसका मूल्यांकन किया जाएगा। बड़े पैमाने पर ट्रायल भी ब्राजील और दक्षिण अफ्रीका में किए जा रहे हैं, जबकि अमेरिका में 30 हजार लोग अध्ययन के लिए तैयार हैं। विशेषज्ञों का मानना है कि मनचाहे परिणाम प्राप्त करने के बाद इस साल के अंत तक यह वैक्सीन आ जाएगी। एसट्रायज़नेका ने कहा है कि वह सरकारों और अन्य एजेंसियों को 2 अरब वैक्सीन की आपूर्ति करने के लिए प्रतिबद्ध है। भारत में पुष्प स्थित सीरम इंटीट्यूट ऑफ इंडिया ने मध्यम और कम आय वाले देशों में एक अरब खुराक की आपूर्ति के लिए समझौता किया है, जिसमें भारत भी शामिल है।