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DRDO develops casualty evacuation bags

By Vijay Mohan

- **Bag is water and air-proof**
- **The bag, in the shape of a rigid cylinder, is made of non-woven, water-repellant fabric with air and waterproof zippers as well as a ventilator**
- **It is coated with a film to cater to a chemical, biological, radiological and nuclear (CBRN) environment with requisite protection against blood and viral penetration**

The Defence Research and Development Organisation (DRDO) has designed a casualty evacuation bag to transport or isolate persons infected with Covid-19. The bag is water and air-proof and treated to deal with biological agents.

“The design of the bag was finalised this week and DRDO will be procuring an initial lot of 500 such bags,” a senior DRDO official said. “We are looking at the private industry which has expertise in this field to manufacture them,” he added.

DRDO’s Defence Bioengineering and Electromedical Laboratory (DEBEL), which carries out research in aero-medical engineering and life support equipment and Nuclear Chemical and Biological (NBC) protection systems, has developed this bag.

According to DRDO sources, the bag, in the shape of a rigid cylinder, is made of non-woven, water-repellant fabric with air and waterproof zippers as well as a ventilator. It is coated with a film to cater to a chemical, biological, radiological and nuclear (CBRN) environment with requisite protection against blood and viral penetration.

The size and shape of the Covid casualty evacuation bag is something akin to a fabric chamber developed by DEBEL in the aftermath of the 1999 Kargil conflict to manage patients affected with High Altitude Pulmonary Odema (HAPO). The chamber is airtight and simulates air pressure that is prevalent at lower altitudes while evacuating patients from high altitude.

The DRDO has been tracking the spread of Covid-19 since the first reports of its outbreak in China’s Wuhan province. It took a call in the first week of March to enhance efforts for creating counter-measures and creating a mass supply solution of critical medical requirements if Covid-19 becomes a crisis.

A protective body suit developed earlier by DRDO’s Institute for Nuclear Medicine and Allied Sciences for medical and paramedical staff to manage and evacuate casualties in the event of CBRN emergencies has now been adapted for use by medical staff and health workers engaged in combating Covid-19. Over 10,000 such suits are being produced per day by private manufacturers and production is expected to ramp up further with more private players joining hands.

Critical care ventilators, advanced, five-layer N-99 face masks and hand sanitisers are other products developed by DRDO laboratories that are now being mass-produced by the industry to mitigate the Covid-19 threat.

<https://www.tribuneindia.com/news/drdo-develops-casualty-evacuation-bags-62867>



Body suits, sanitizers, and N99 masks: DRDO gears up to fight coronavirus

The body suit is one of the four instruments developed by the DRDO and ready to be deployed in 'War against Corona'

A body suit developed by India's premier research and development organisation DRDO can protect doctors and other health workers attending on Covid-19 patients.

The Defence Research and Development Organisation (DRDO) said the body suit can shield doctors, medical staff, sanitation workers and others.

According to a DRDO statement, the body suit developed earlier for medical and paramedical staff to manage and evacuate the casualties in the event of radiological emergencies has now been converted into a full body suit to stop contamination.

"The suit is washable and has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found suitable for the cause," it said.

Each suit costs Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day.

The body suit is one of the four instruments developed by the DRDO and ready to be deployed in 'War against Corona'.

Since COVID-19 affects pulmonary functions, it has developed critical care ventilators.

The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor (Scanray Tech Pvt Ltd, Mysore) to produce ventilators. "Innovation is on to create 'Multi patient ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week," the DRDO said.

Around 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.

The third instrument developed by DRDO is five layer N99 masks with two layers of nano mesh. The production vendors of this advanced mask are Venus Industries Mumbai, and IMTEC Kolkata. The capacity is 10,000 masks per day. Material for these are sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

The DRDO has also developed hand sanitiser, a basic instrument against spread of Covid-19. It has provided about 4,000 litres of hand sanitiser to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 litres to Ministry of Defence, 300 litres to the Parliament, and 500 litres to various security establishments and high offices.

Initially a DRDO lab, Defence Research & Development Establishment (DRDE), Gwalior produced about 20,000 litres. DRDO identified vendor, Gwalior Alco Brew Pvt Ltd, Gwalior for production of sanitisers. It has a capacity of 20,000 to 30,000 litres. It is priced at Rs 20 per litre.

https://www.business-standard.com/article/current-affairs/body-suits-sanitizers-and-n99-masks-drdo-gears-up-to-fight-coronavirus-120033000206_1.html

एरिया सेनेटाइज के लिए लैब में काम करेगी रक्षा प्रयोगशाला, मोबाइल केमिकल तकनीक विकसित करने की पहल

कोरोना वायरस के संक्रमण से निपटने के लिए रक्षा अनुसंधान एवं विकास संगठन यानी रक्षा प्रयोगशाला जोधपुर भी जुटी हुई है। रक्षा प्रयोगशाला लैब में कई लीटर सेनेटाइजर बनाकर आर्मी को वितरित किया है, ताकि आर्मी द्वारा बनाये गए वैलनेस सेंटर में इसका उपयोग किया जा सके

हर्षवर्धन सिंह भाटी

गजेंद्र सिंह दहिया/जोधपुर: कोरोना वायरस के संक्रमण से निपटने के लिए रक्षा अनुसंधान एवं विकास संगठन यानी रक्षा प्रयोगशाला जोधपुर भी जुटी हुई है। रक्षा प्रयोगशाला लैब में कई लीटर सेनेटाइजर बनाकर आर्मी को वितरित किया है, ताकि आर्मी द्वारा बनाये गए वैलनेस सेंटर में इसका उपयोग किया जा सके। इसके अलावा डीआरडीओ अब अपनी लैब में एरिया सेनेटाइज करने की सस्ती तकनीक विकसित करने जा रहा है। लैब टैस्ट के बाद यह तकनीक आर्मी को दे दी जाएगी ताकि आर्मी अपने क्षेत्र के अलावा सिविल में भी इसका उपयोग कर सकेगी।

डीआरडीओ जोधपुर मुख्य रूप से न्यूक्लियर साइंस पर कार्य करता है। कोरोना संक्रमण के खतरे के चलते फिलहाल अधिकांश वैज्ञानिक वर्क फ्रॉम होम कर रहे हैं। डीआरडीओ दिल्ली के महानिदेशक डॉ जी सतीश रेड्डी द्वारा कोरोना से निबटने के लिए आगे आने का आह्वान करने के बाद देश भर की आरडीओ लैबोरेट्रीज भी रूटीन से हठ कर अलग-अलग काम करने में लग गयी हैं। अपनी क्षमता के अनुसार डीआरडीओ के वैज्ञानिक भी केंद्र सरकार को कोरोना संक्रमण के प्रभाव को काम करने के लिए संयोग कर रहे हैं।

जैसलमेर व जोधपुर वैलनेस सेंटर में गया सेनेटाइजर

आर्मी के द्वारा राजस्थान में सबसे पहले जैसलमेर मिलिट्री स्टेशन में वैलनेस सेंटर बना कर वर्तमान में 484 भारतीयों को रखा गया है, जिन्हे ईरान से रेस्क्यू करके लाया गया है हाल ही में जोधपुर मिलिट्री स्टेशन में भी 277 भारतीय लाये गए हैं, जिन्हे क्वारंटाइन सुविधा दी जा रही है। इन दोनों ही कैंप में प्रतिदिन सेनेटाइजर की जरूरत पड़ती है। हर दो तीन दिन में एरिया सेनेटाइज करना पड़ता है। डीआरडीओ ने दोनों ही वैलनेस सेंटर में सेनेटाइजर बना कर वितरित किये हैं ताकि आर्मी को परेशानी नहीं होगी।

डॉ. रविंद्र कुमार, निदेशक, रक्षा प्रयोगशाला, जोधपुर

<https://www.patrika.com/jodhpur-news/mobile-chemical-spray-technique-developed-by-drdo-to-sanitize-places-5943244/>

Mon, 30 March 2020

DRDO to soon equip frontline health personnel with advanced ventilators, face masks, PPEs to fight Corona

In a force multiplying move, the Defence Research and Development Organisation (DRDO) will soon equip the frontline Health personnel of the country with advanced ventilators, face masks and Personal Protection Equipments in their fight against spread of novel Coronavirus.

DRDO Chairman Dr G Sateesh Reddy informed our Hyderabad Correspondent that many of them will be made available in next couple of days to health professionals. Stating that many technologies have been transferred to the industry, he said, the DRDO has developed a technology to use one ventilator for multiple patients.

He further informed that the DRDO is helping the Industry to produce certain components and large number of ventilators will be produced in next few weeks with Bharat Electronics limited (BEL) and a couple of other Industries.

Dr Reddy said, the DRDO has developed five layered N-99 masks and offered technology to the Industry to produce in large scale. He held a meeting with 800 industry representatives through Video Conference. He further said the technology relating to the PPEs has also been offered to Industry for production in large quantity.

Stating that the DRDO has produced surgical face masks in emergency and distributed to Delhi police, Mr Reddy said, 3D printing face masks will be produced for police and health workers.

Dr Sateesh Reddy also informed that Sanitizing Vans will also be produced soon in considerable numbers and they will be supplied to major cities and towns for sanitizing people who enter the van. Similarly, he said, technology relating to Oxygen Tubes is also being worked on among other technologies and they also will be produced soon.

<http://www.newsonair.com/News?title=DRDO-to-soon-equip-frontline-Health-personnel-with-advanced-ventilators%2C-face-masks%2C-PPEs-to-fight-Corona&id=384143>

live**mint**

Mon, 30 March 2020

How defence establishments are fighting the Covid-19 battle

By Elizabeth Roche

- ***Military establishments are running isolation centres, hosting Indians rescued from Covid-19 hotspots***
- ***Medical teams of the armed forces have been dispatched to help the administrations in the Maldives and Nepal***

From manufacturing hand sanitizers, protective masks and bodysuits to identifying and preparing military hospitals for treating novel coronavirus patients, India's defence establishment is doing its role, albeit away from the spotlight, to help the nation deal with the crisis.

Indian military establishments are running isolation and wellness centres across the country, hosting groups of Indians brought back from Covid-19 hotspots such as Iran.

On Sunday, a fresh batch of 275 evacuees from Iran, who reached India, were taken to the Army Wellness Facility in Jodhpur, according to a statement from a defence spokesman in Rajasthan. A previous batch of 277 Indians evacuated from Iran is already at this centre and is being taken care of under Operation Namaste, the spokesman said.

According to a person familiar with the developments, those coming from Iran and other Covid-19 affected nations have to undergo a mandatory period in quarantine, which is why the two groups are at the same wellness centre in Jodhpur. "They are being regularly monitored by the army medical teams," the person added.

Instructions have also been issued to the Indian Army's 62 Cantonment Boards in 19 states and Union territories "to identify beds in hospitals or health centres and guest houses for any eventuality", a defence ministry official said.

Medical teams of the armed forces have been dispatched to help the administrations in the Maldives and Nepal, added the defence ministry official.

Separately, the Indian Air Force (IAF) has created nine quarantine facilities across the country. "From 1 February, the Air Force has evacuated 1,059 people (including five foreign nationals) and quarantined them at their facilities or bases in Manesar (Haryana), Hindon (Ghaziabad), Ghatkopar (Mumbai) and Jaisalmer (Rajasthan)," IAF said in a statement. Besides, Command Hospital Air Force, Bengaluru, has been designated as the first laboratory under IAF to undertake Covid-19 testing, the statement said. "This will greatly enhance the region's ability to carry out quick testing of suspected cases and allow prompt and timely intervention where required."

IAF has undertaken at least two missions to evacuate Indian nationals and citizens of friendly countries from Covid-19 front lines—China, Japan and Iran—defence minister Rajnath Singh said at a meeting in New Delhi last week to take stock of preparedness.

The Indian Navy has set up a quarantine camp at its base in Visakhapatnam, a statement from the navy said. It has also set up isolation facilities at its premier hospital INHS Asvini at Mumbai. The naval base in Kochi is gearing up to offer quarantine facilities for Indians nationals. Ordnance Factory Boards have designated 285 beds for isolation wards.

The Defence Research and Development Organisation (DRDO) is now focused on "creating mass supply solutions of critical medical requirements", a statement from DRDO said.

Hand sanitizers have been produced for the armed forces, medical corps, defence security corps, the defence ministry and Parliament. For Delhi Police, DRDO has supplied 20,000 three-ply masks, besides hand sanitizers. DRDO is working with private firms to produce the five-layer N99 masks, said its statement.

<https://www.livemint.com/news/india/how-the-defence-establishments-are-fighting-the-covid-19-battle-11585476180352.html>



Mon, 30 March 2020

Prepping for the future after coronavirus: 9 steps taken by government

By Vikash Aiyappa

New Delhi: Amid looming fears of coronavirus infection entering the community transmission stage, India is boosting its overall health infrastructure by initiating measures like designating dedicated hospitals for affected patients in states, ramping up procurement of ventilators and mobilising resources of Railways and armed forces to deal with any eventuality.

As of now, the country reported 873 coronavirus cases and 19 deaths.

Even though the Health Ministry and the Indian Council of Medical Research (ICMR) have been insisting that there is "no solid evidence" of community transmission so far, the government has started scaling up health infrastructure to deal with any situation.

Here's how India is boosting capacity for tougher challenges ahead:

- The Centre has asked all states to earmark hospitals only for treating COVID-19 patients and ramp up their capacity to manage increasing number of cases. At least 17 states have started work on it.
- The armed forces are keeping ready 28 service hospitals to provide treatment to COVID-19 patients apart from five hospitals which are carrying laboratory tests for the infection.
- Defence public sector undertaking Bharat Electronics Limited has been tasked with manufacturing ventilators while premier defence research laboratory DRDO is producing protective gears for medical personnel and supplying hand sanitisers and face masks to various agencies involved in patient care.
- The government has granted emergency financial powers to Army corps and divisional commanders to procure equipment to set up medical and quarantine facilities for affected people.
- The railways has manufactured a prototype of an isolation ward for treating coronavirus patients by converting non-air-conditioned train coaches. Once the best practices are finalised, each railway zone would manufacture a rake with 10 coaches every week, the national transporter said.
- The Centre has directed the states to keep some beds reserved for creating isolation facilities in public and private hospitals and ensuring that stable patients are discharged as early as possible.
- The health ministry has asked hospitals and medical education institutions to procure sufficient number of ventilators and high-flow oxygen masks to be prepared for any possible influx of patients.
- The AIIMS has set up a task force to develop management protocol for COVID-19 and has constituted several committees to be able to respond to challenges which may come across in coming days due to the rising infection, officials said.
- The Centre has also asked hospitals to postpone all non-essential surgeries.
- Private hospitals too have ramped up their facilities and creating focussed team to handle any surge of patients in future.
- To address the shortage of ventilators in the country, joint secretary in the ministry of health Lav Agarwal on Friday said that an order has been placed for 10,000 ventilators in addition to earlier order of 1,200 ventilators.




<https://sg.news.yahoo.com/prepping-future-coronavirus-9-steps-040451779.html>

Army trains troops in helping states enforce lockdown

A major part of the training involves the type of equipment the troops need to carry, clothing to be worn and precautions to be taken for themselves and in treating and helping the villagers

By Shaurya Karanbir Gurung

New Delhi: The Army is training its troops to help state authorities in managing the country-wide lockdown and any likely law and order situation as well as securing villages that may be badly affected by the Covid-19 pandemic.

<h3>In Full Force</h3> <p>'Operation Namaste' launched by Army chief</p>		<p>Quick Reaction Medical Teams to be ready, at six-hour notice, to meet requirements of civil administration</p>
 <p>30% field hospitals kept on standby to turn into Covid-19 hospitals in pandemic hotspots</p>	 <p>All field hospitals instructed to be ready to set up a 45-bed isolation facility, create 10-bed ICU facility</p>	<p>Quarantine facilities at Jhansi, Babina, Secunderabad, Chennai, Jalpa, Bhopal, Kolkata and Suratgarh with 6,000 beds earmarked</p>

A major part of the training involves the type of equipment the troops need to carry, clothing to be worn and precautions to be taken for themselves and in treating and helping the villagers.

While the Army has been liaising with the civil administrations of Maharashtra, Delhi, Uttar Pradesh, Karnataka, Kerala and Rajasthan, no requisition of troops has been made yet.

Officials, on condition of anonymity, said most of the state civil administrations that the Army has spoken to would be able to manage the nationwide lockdown for at least the next fortnight. However, some Army formations have been training troops to be prepared in case of being called to help.

For example, a formation on India's western front is training its troops to aid civil authorities, in case a requisition is made, if the law and order situation deteriorates with rioting and looting.

Training is also being given to aid local authorities in helping a village affected by the pandemic. Citing the example of Rajasthan's Bhilwara town, which has become a COVID-19 hotspot, an official on condition of anonymity said: "The training of troops is on how they should operate, including the equipment they need to carry, in such an environment."

Troops will be required to wear personal protection clothing (PPEs), although their availability is a challenge and additional procurement is being made for the armed forces which have been directed to augment medical resources for the civil health setup. "We have expired PPEs that are used for training the troops on how to wear them," the official said. PPEs are important while treating and handling suspected Covid-19 cases. It is the same clothing that is worn during nuclear and biological warfare. The training is

also focused on equipment such as personal arms and scientific instruments that are expected to be carried for aid to civil authority.

The Army's unit commanders have also been tasked to come up with new training programmes in view of the reduced manpower, due to the leave extensions, and to keep troops physically and mentally active. This training is being done while maintaining social distancing norms due to Covid-19 outbreak.

<https://economictimes.indiatimes.com/news/defence/army-trains-troops-in-helping-states-enforce-lockdown/articleshow/74881566.cms>



Mon, 30 March 2020

Indian army modifies bus to carry Covid-19 patients, here's how it is designed to stop coronavirus spread

The bus is modified to have a single entry, treatment chamber along with ventilators, isolation of driver and co-driver along with disposable seat covers and process of contamination

The Western Command of the Indian Army has now modified a bus to carry patients with symptoms of COVID-19. According to a tweet by the Additional Directorate General of Public Information of the Indian Army, the bus is modified to have a single entry, treatment chamber along with ventilators, isolation of driver and co-driver along with disposable seat covers and process of contamination.

As of 5 pm on March 28, the number of active cases in India stood at 819. 79 patients have been cured and 19 deaths have been recorded so far. As the mitigation of the outbreak becomes a worrying affair in the country, the government is taking several measures to prevent the large accumulation of people to curb the spread.

On March 28, the Indian Government announced that it was planning to turn some of the railway coaches into isolation wards for patients diagnosed with COVID-19. In light of the same one train coach has already been turned into a prototype quarantine facility, the Indian Railways said in a statement on Saturday.

Once there is a green signal from the government, the plan includes converting each of country's railway zones to convert 10 coaches into such wards every week. In all, the railways has 16 such zones.

"Railways will offer clean, sanitised & hygienic surroundings for the patients to comfortably recover," tweeted railways minister Piyush Goyal. He did not specify how many people could be cared for in each coach.

<https://www.news18.com/news/auto/indian-army-modifies-bus-to-carry-covid-19-patients-heres-how-it-is-designed-to-stop-coronavirus-spread-2555597.html>



Coronavirus: ISRO's Vikram Sarabhai Space Centre halts making rockets to design ventilators, make hand sanitisers

Designing simple to operate ventilators, manufacturing of sanitisers, oxygen canisters and masks while putting on hold manufacture of rockets is what Vikram Sarabhai Space Centre (VSSC), part of ISRO, is doing to meet the emergency needs of the people and owing to lockdown, said a top official.

He also said all the staff at the VSSC are safe and not affected by Coronavirus. Based in Thiruvananthapuram in Kerala, the VSSC part of the Indian Space Research Organisation (ISRO) makes the rockets that launches the Indian and foreign satellites. "We are designing ventilators that are different from what is already there. We are designing ventilators that can be operated in a simple manner and when power supply is not there," VSSC Director S Somanath told IANS.

He said, as regards ventilators, the VSSC's job is only to design and the manufacturing will be done by industries.

"We are making sanitisers for captive and also for use of others. We have made over 1,000 litres. Similarly, masks are made by employee societies," he added.

Meanwhile, the employees have been asked to work from home and VSSC's communication and computer systems are working well in a secure condition.

"Our communication and computer networks are safe and secure and those who can work from home are working from home while critical operations are taken care of by deploying necessary staff. Whenever needed, video conferencing is also held," Somanath added.

According to him, manufacturing of rockets has been put on hold for now at the VSSC.

On 4 March, a day before the scheduled launch GISAT-1 onboard the GSLV-F10 and hours before the start of the launch countdown, Indian space agency announced postponement of the mission owing to some technical glitch.

"The launch of GISAT-1 onboard GSLV-F10 (Geosynchronous Satellite Launch Vehicle-F10), planned for March 5, 2020, is postponed due to technical reasons. Revised launch date will be informed in due course," ISRO had said on 4 March.

<https://swarajyamag.com/insta/coronavirus-isros-vikram-sarabhai-space-centre-halts-making-rockets-to-design-ventilators-make-hand-sanitisers>



Mon, 30 March 2020

Indians develop device to deactivate Covid-19 lifecycle, deployment in West Bengal begins

By Radhika Parashar

New Delhi: The COVID-19 outbreak in India has left 19 dead and currently there are 909 confirmed cases, including 47 foreign nationals, according to the Health and Family Welfare Ministry. India went into complete lockdown at midnight on 24 March and will remain so until 14 April in order to break the infection cycle of the disease.

A medical cure for the deadly viral infection, which has left a trail of deaths across countries and affected tens of thousands, still remains a distant reality. But alumni from two premier institutes in India - the Indian Institute of Technology, Kharagpur (IIT-KGP) in West Bengal and All India Institute of Medical Sciences (AIIMS), New Delhi - have developed a device called "Airlens Minus Corona" which could deactivate the life of the coronavirus using charged or ionised water droplets.

"Airlens Minus Corona is basically an electrostatic water spray (EWS) technology. We induce charge on water droplets which in turn kill viruses by oxidation reaction. This technology has been recently developed seeing the emergency situation", Dr Shashi Ranjan, who specialises in biomedical sciences with nanotechnology and studied at institutes like the AIIMS and US-based Stanford University, told Sputnik. Ranjan along with Debayan Sahah are co-founders of PerSapien Innovation, the company responsible for the Airlens Minus Corona device.

According to Ranjan, the formative technology on which the new device is based is called "Minus 2.5" and was first developed to kill pollution particles in the air. The "Minus 2.5" technology was tested in labs certified by the Delhi-based National Accreditation Board for Certification Bodies (NABCB).

"We are already working with the West Bengal government for deployment of the sanitising device in the states. The technology has also been recognised by the New Delhi-based Technology Development Board (TDB) under the federal Ministry of Science and Technology. The federal government is now seeking proposals to use the device for large scale sanitisation/sterilisation", Ranjan added.

The device, which is being manufactured in Kolkata city's Electro Plaza Project, could be used to sterilise hospitals, bus stops, railway stations, shopping malls, and other public places.

Earlier, the science behind EWS was proven to be killing microbes by Professor Philip Demokritou from Harvard University.

In Vietnam, a similar procedure was developed to sanitise people working around COVID-19.

Vietnam's National Institute of Occupational and Environmental Health, along with the Hanoi University of Science and Technology, developed a two-chambered device, where one sprayed electrolysed water as droplets and the other directed heat and ozone onto the body of the person being sanitised.

The pandemic coronavirus, with its 14-days life cycle, has affected over 597,000 people globally and resulted in the death of over 27,000 patients since December 2019, real-time statistics platform Worldometer notes.

<https://sputniknews.com/india/202003281078742082-indians-develop-device-to-deactivate-covid-19-lifecycle-deployment-in-west-bengal-begins/>

Coronavirus: IIT- Kharagpur researchers design face shields for health care workers

*The clothing was fabricated for medical, para-medics in the event of radiological emergencies
A team from IIT-Kharagpur, under the guidance of Dhara and Das, has produced 14 such face shield prototypes in two hours and are in the process of making many more, working from their homes*

Kolkata3: As the clamour for protective gears to fight the novel coronavirus grows among healthcare workers in the state, a group of researchers of a premier institute has come up with a prototype of a face shield for those attending to COVID-19 patients.

Santanu Dhara and Sangeeta Das Bhattacharya, researchers at the School of Medical Science and Technology, IIT Kharagpur, have designed the face shield with transparency sheet, sponge, folded paper, cardboard, rubber band and double-sided tape all of which is usually available at homes or local shops, a statement issued by the institute said.

A team from IIT-Kharagpur, under the guidance of Dhara and Das, has produced 14 such face shield prototypes in two hours and are in the process of making many more, working from their homes.

“At a time when the demand for protective gears has escalated, we wanted to make improvisations using easily sourced materials and come to the aid of our health workers,” Dhara said.

Face shield is a transparent plastic protective cover, attached to an elastic head gear.

The institute, in its statement, however, emphasised that the Items are only prototypes for now, and that every medical product and equipment requires a series of testing and subsequent certification by appropriate authorities before use. (PTI)

<https://www.hindustantimes.com/education/coronavirus-iit-kharagpur-researchers-design-face-shields-for-health-care-workers/story-Ybz5qaX39y4Y37pCoyAwPJ.html>



रिसर्च: कोरोनावायरस से लड़ने के लिए नमक कम खाएं क्योंकि यह शरीर की रोगों से लड़ने की क्षमता घटाता है

*यूनिवर्सिटी हॉस्पिटल बोन में हुई रिसर्च, अधिक नमक खाने पर बैक्टीरियल और
वायरल इन्फेक्शन का खतरा ज्यादा। ब्लड में ग्रैनुलोसाइट प्रतिरोधी कोशिकाएं
इन्फेक्शन से बचाती हैं, नमक अधिक होने पर ये कमजोर साबित होती हैं।*

हेल्थ डेस्क: कोरोनावायरस से लड़ना चाहते हैं तो खाने में नमक की मात्रा कम ही रखें। खाने में नमक की अधिक मात्रा ब्लड प्रेशर को बढ़ाने के साथ रोगों से लड़ने की क्षमता को घटाती है। यूनिवर्सिटी हॉस्पिटल बोन में हुई रिसर्च में ये बातें सामने आई हैं। साइंस ट्रांसलेशन मेडिसिन जर्नल में प्रकाशित किया अध्ययन के मुताबिक, शोधकर्ताओं ने चूहों और इंसानों दोनों पर अध्ययन किया है।

इंसान और चूहे दोनों की इम्युनिटी कम हुई

शोधकर्ताओं के मुताबिक, जिन चूहों को अधिक नमक वाला खाना दिया गया उनमें बैक्टीरियल और वायरल इन्फेक्शन ज्यादा हुआ। वहीं, शोध में शामिल किए गए जिन इंसानों ने हर दिन छह ग्राम अतिरिक्त नमक का सेवन किया उनकी भी इम्युनिटी कमजोर पाई गई। दिन में दो बार फास्ट फूड का सेवन करने से इंसान छह ग्राम अतिरिक्त नमक का सेवन कर लेते हैं।

ऐसे किया गया अध्ययन

सोडियम क्लोराइड इंसानों की रोग प्रतिरोधी क्षमता पर नकारात्मक प्रभाव डालता है। शोधकर्ताओं ने शामिल प्रतिभागियों को हर दिन छह ग्राम अतिरिक्त नमक का सेवन कराया। ये नमक दो फास्ट फूड में मौजूद थे जैसे दो बर्गर और दो फ्रेंच फ्राई के पैकेट।

एक हफ्ते बाद शोधकर्ताओं ने प्रतिभागियों के ब्लड सैम्पल लिए और उनमें मौजूद ग्लूकोसाइट की मात्रा को देखा। ग्लूकोसाइट प्रतिरोधी कोशिकाएं होती हैं जो रक्त में मौजूद होती हैं।

नमक प्रतिरोधी क्षमता को घटाता है

नमक की उच्च मात्रा के कारण ये ग्लूकोसाइट प्रतिरोधी कोशिकाएं बैक्टीरिया और वायरस से लड़ने में कम प्रभावकारी साबित हो रही थीं। ज्यादा नमक खाने से रक्त में ग्लूकोकोरटिसोइड का स्तर भी बढ़ गया। ये पदार्थ प्रतिरोधी क्षमता पर हावी होकर उसे कमजोर कर देता है। नमक का ज्यादा सेवन करने से प्रतिरोधी क्षमता कमजोर हो सकती है।

एक दिन में 5 ग्राम नमक ही काफी

शोध के अनुसार एक वयस्क को दिन में पांच ग्राम से ज्यादा नमक का सेवन नहीं करना चाहिए। लेकिन, असलियत में लोग इससे कहीं ज्यादा नमक का सेवन हर दिन कर लेते हैं। रोबर्ट कोच इंस्टीट्यूट के एक शोध के अनुसार एक औसत आदमी दिनभर में 10 ग्राम नमक का सेवन करता है और महिला आठ ग्राम नमक का सेवन करती हैं। ज्यादा नमक का सेवन करने से रक्तचाप में बढ़ोतरी होती है और इससे दिल के दौरों व मस्तिष्काघात का खतरा बढ़ता है।

<https://www.bhaskar.com/happylife/news/coronavirus-n95-face-mask-when-and-how-to-use-masks-as-corona-covid-19-cases-rise-in-india-utility-utility-127070573.html?art=next>



अमर उजाला

Mon, 30 March 2020

रिसर्च: इलाज के बाद लक्षण गायब हो जाने के बाद भी शरीर में रह सकता है कोरोना वायरस

लाइफस्टाइल डेस्क, अमर उजाला, नई दिल्ली: कोरोना वायरस के बढ़ते संक्रमण के बीच दुनियाभर के अलग-अलग देशों में इस वायरस के विभिन्न पहलुओं को लेकर शोध हो रहे हैं। वैज्ञानिक इसकी दवा और वैक्सीन को बनाने में लगे हैं, तो दूसरी ओर शोधकर्ता इसके लक्षणों को लेकर भी रिसर्च कर रहे हैं। हाल में हुए एक रिसर्च में बताया गया है कि इलाज के बाद कोरोना के लक्षण गायब हो जाने के बाद भी मरीज के शरीर में कोरोना वायरस की उपस्थिति हो सकती है। शोधकर्ताओं का कहना है कि इसलिए इस महामारी को रोकना चुनौती भरा है।

आइए जानते हैं इस रिसर्च के बारे में:

अमेरिकन जर्नल ऑफ रेस्पिरेटरी एंड क्रिटिकल में प्रकाशित इस रिसर्च में शोधकर्ताओं ने दावा कि है कि जिन मरीजों को रिसर्च सैंपल के तौर पर लिया गया, उनमें से आधे मरीजों में बीमारी के लक्षण गायब होने के बाद भी वायरस पाया गया। शोधकर्ताओं ने कोविड-19 के हल्के संक्रमण वाले 16 मरीजों का अवलोकन किया और इस नतीजे पर पहुंचे।

इस रिसर्च स्टडी में जिन 16 मरीजों की केस स्टडी की गई, उनका चीन की राजधानी बीजिंग स्थित पीएलए जनरल अस्पताल में बीते 28 जनवरी से नौ फरवरी तक इलाज हुआ। इस अवधि में उन्हें अस्पताल से छुट्टी दे दी गई। लेकिन इसके बाद भी वायरस उसके शरीर में रहा।

अमेरिका की येल यूनिवर्सिटी के शोधकर्ताओं में भारतीय मूल के वैज्ञानिक लोकेश शर्मा भी शामिल थे। उन्होंने बताया कि इस स्टडी में जिन रोगियों के नमूनों का विश्लेषण किया, उनके रिपोर्ट निगेटिव आने के बाद उन्हें ठीक समझा गया और अस्पताल से छुट्टी दे दी गई। उन्होंने कहा कि आधे यानी 16 में से आठ मरीजों में वायरस का प्रसार हो ही रहा था।

मालूम हो कि कोरोना वायरस के शुरुआती लक्षण सर्दी, खांसी, बुखार और वायरल फ्लू से मिलते हैं। इसको लेकर बहुत सारे लोगों को सामान्य सर्दी, खांसी, बुखार या फ्लू में भी कोरोना संक्रमण होने का डर हो जाता है। हालांकि इसमें घबराने की बात नहीं है। कोरोना के शुरुआती लक्षणों में वायरल फ्लू से जो अंतर दिखता है, वह है खांसी। कोरोना संक्रमण की स्थिति में व्यक्ति को सूखी खांसी होती है। हालांकि केवल सूखी खांसी होना भी कोरोना का लक्षण नहीं कहा जा सकता। कोरोना के अन्य लक्षणों के बारे में जांच कर वे डॉक्टर से सलाह ले सकते हैं।

<https://www.amarujala.com/photo-gallery/lifestyle/fitness/coronavirus-research-says-covid-19-may-remain-in-patients-after-hidden-symptoms?pageId=5>