

# ICMR approves first indigenously developed coronavirus test kit by DRDO

*ICMR approved the first indigenously developed Coronavirus test kit by the country's premier research and development organization DRDO*

*By Gloria Methri*

Mumbai: The Indian Council of Medical Research (ICMR) on Monday approved the first indigenously developed Coronavirus test kit by the country's premier research and development organization DRDO. The test will cost Rs 1,200 against the present cost of Rs 4,500 per test. The Defence Research and Development Organization (DRDO) has devised several indigenous equipments including multiple-use ventilators, isolation tubes, bodysuits for doctors and N95 masks to fight COVID-19.

## 1. Ventilators

Since the COVID-19 virus also affects pulmonary functions, DRDO has also developed a wide range of other products like critical care ventilators. The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor to produce ventilators. The DRDO in a statement said that Innovation is on to create a 'Multi patient-ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week. Approximately 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.



## 2. Body Suits

To fight the deadly coronavirus infection and to protect the medical staff from falling prey to the disease, DRDO developed a special bodysuit which can protect doctors and other health workers attending on Coronavirus patients. The suit which comes with a washable quality can be used to shield doctors, medical staff, sanitation workers and others. The qualities of the suit which has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found appropriate for the cause.

The cost for each suit will be Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day. The bodysuit is one of the four instruments developed by the DRDO and is ready to get deployed in 'War against Corona'.

## 3. N99 Masks

The third instrument developed by DRDO is a five-layer N99 mask with two layers of nanomesh. The capacity is 10,000 masks per day. Material for these are is 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.

## 4. Hand Sanitizers

Apart from the instruments mentioned above, the DRDO has also developed hand sanitizer, a basic necessity against the spread of COVID-19. It has provided about 4,000 liters of hand sanitizer to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 liters to Ministry of Defence, 300 liters to the Parliament, and 500 liters to various security establishments and high offices to curb the spread of the deadly virus.

<https://www.republicworld.com/india-news/general-news/icmr-approves-first-ingenuously-developed-coronavirus-test-kit-by-drdo.html>

# DRDO develops bodysuit for doctors, health workers treating COVID-19 patients

*A bodysuit is developed by India's premier research and development organization DRDO which can protect doctors and health staff attending coronavirus patients*

*By Prachi Arya*

Mumbai: To fight the deadly coronavirus infection and to protect the medical staff from falling prey to the disease, a special bodysuit is developed by India's premier research and development organization DRDO which can protect doctors and other health workers attending on COVID-19 patients. Designed by the Defence Research and Development Organisation (DRDO), the suit which comes with a washable quality, can be used to shield doctors, medical staff, sanitation workers and others.

## **Body-Suit to Avoid Contamination**

DRDO released a statement that the bodysuit which was 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 statement also explained the qualities of the suit which has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found appropriate for the cause.



The cost for each suit will be Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day. The bodysuit is one of the four instruments developed by the DRDO and is ready to get deployed in 'War against Corona'.

## **Other Medical Instruments Prepared by DRDO**

Apart from this, since the COVID-19 virus also affects pulmonary functions, DRDO has also developed a wide range of other products like critical care ventilators. The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor to produce ventilators. The DRDO in a statement said that Innovation is on to create a 'Multi patient-ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week. Approximately 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 a five-layer N99 mask with two layers of nanomesh. The capacity is 10,000 masks per day. Material for these are is 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.

Apart from the instruments mentioned above, the DRDO has also developed hand sanitizer, a basic necessity against the spread of COVID-19. It has provided about 4,000 liters of hand sanitizer to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 liters to Ministry of Defence, 300 liters to the Parliament, and 500 liters to various security establishments and high offices to curb the spread of the deadly virus.

<https://www.republicworld.com/india-news/general-news/drdo-develops-bodysuit-to-stop-the-spread-of-coronavirus-contamination.html>

## DRDO body suit to protect doctors from Coronavirus

Hyderabad: 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.

### DRDO Statement

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'.

### Ventilators

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.

### Hand Sanitiser

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.siasat.com/drdo-body-suit-protect-doctors-coronavirus-1866640/>

## DRDO developing ventilator prototype

New Delhi: The Defence Research Development Organisation has developed a prototype ventilator that can be used for multiple patients, its chief Satheesh Reddy said on Monday, amid a spike in the number of coronavirus cases in the country.

He added the model is being improved to include changes suggested by medical researchers and doctors and the new version should be ready by next week.

"We are attempting to take the output of one ventilator. The mechanism makes it usable for multiple patients. We have developed the first model. We have seen it is working. There are some medical researchers, doctors who have advised us to incorporate features. We are working on it," he said.

Reddy said this is a "last-minute resort" if the number of coronavirus patients increases and there is shortage of ventilators.

"By next week it should be ready with the suggestions made by the doctors and medical researchers," he said.

The DRDO has prepared ventilator designs in the past and passed it on to the industry.

Separately, the Ministry of Health said the DRDO will begin manufacturing 20,000 N-95 masks per day from next week.

The ministry has also asked the Bharat Electronics Ltd, a public-sector undertaking under the Ministry of Defence, to manufacture 30,000 ventilators in next two months.

Among private players, Agva Healthcare, Noida, has been given an order to manufacture 10,000 ventilators within a month. Their supplies are expected to commence in the second week of April, the ministry said in a tweet.

*(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI)*

<https://www.outlookindia.com/newscroll/drdo-developing-ventilator-prototype/1785689>

## Business Standard

## One ventilator can be used by multiple COVID-19 patients: DRDO Chairman

New Delhi: Defence Research and Development Organisation (DRDO) Chairman Dr G Satheesh Reddy on Monday said that a mechanism has been developed with which one ventilator can be used by multiple COVID-19 patients.

"We have developed a mechanism with which one ventilator can be used by multiple patients. In case, there is a large number of patients and a shortage of ventilators, then we can use one ventilator for multiple patients," said Reddy.

Reddy said the ventilator has been tested in few hospitals and it is working fine.

"That ventilator has been tested in a couple of hospitals and a couple of doctors, and it is working. Medical experts have given more suggestions to us. Probably in the next couple of days, we will be ready with the final product with new features added to it," added the DRDO chairman.

*(This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.)*

[https://www.business-standard.com/article/news-ani/one-ventilator-can-be-used-by-multiple-covid-19-patients-drdo-chairman-120033001865\\_1.html](https://www.business-standard.com/article/news-ani/one-ventilator-can-be-used-by-multiple-covid-19-patients-drdo-chairman-120033001865_1.html)

# DRDO to develop ‘multi-patient ventilators’ for critical COVID-19 patients

*The multi-patient ventilators will help support several patients through a single unit*

*By Sangeeta Nair*

The Defence Research and Development Organisation (DRDO) is trying to develop 'multi-patient ventilators' to support critical COVID-19 patients.

The multi-patient ventilators will help support several patients through a single unit. The DRDO is developing the advanced ventilators to meet the demand in case the coronavirus outbreak goes out of control.

The first lot of the multi-patient ventilators are expected to be ready within a week.

## **Multi-Patient Ventilators: Key Highlights**

The DRDO aims to produce around 5000 ventilators in the first months and 10,000 subsequently. Each of the critical care ventilators is expected to cost around Rs four lakh.

- The organisation has found some local alternatives to the supply of critical components.
- Around nine companies have been identified for design transfer and to produce the components of the ventilator. Anand Mahindra has been selected for the fabrication of components.
- As per reports, the government has reached out to five automobile companies- Honda Cars India, Maruti Suzuki India, Hyundai Motor India, Mahindra and Mahindra and Tata Motors to explore the possibility of making ventilators at their plants.
- The Defence Research and Development Organisation is also developing personal protection equipment including five-layered N-99 face masks for the healthcare personnel of the country.
- The DRDO has offered the technology to the industry to produce the face masks on a large scale. The DRDO has also produced surgical face masks and distributed them to the Delhi Police.
- The DRDO is also producing sanitizing vans in large numbers to supply to major cities and towns to sanitize people who enter the van.

## **Ventilators in India**

- India has a total of about 40,000 ventilators at present including about 8,500 in public hospitals.
- Kerala, which has the highest number of positive coronavirus cases has around 5000 ventilators, Mumbai has about 1,000, Tamil Nadu has around 1,500 and Madhya Pradesh has about 1,800 ventilator units.
- The number of ventilators in some of the eastern states is less than 10.

## **Background**

The Health Ministry has asked the public sector unit to make about 10,000 ventilators. Bharat Electronics Limited (BEL), a PSU under the Ministry of Defence, is expected to supply about 30,000 ventilators by June 2020.

The initiative to invite corporates to make multi-patient ventilators is also being tried out by the United States, which currently has the maximum COVID-19 patients in the world.

<https://www.jagranjosh.com/current-affairs/drdo-to-develop-multi-patient-ventilators-for-critical-covid-19-patients-1585563480-1>



Tue, 31 March 2020

## कोरोना से जंग में भारत को बड़ी कामयाबी,

### मल्टीपेशेंट वेंटिलेटर का टेस्ट सफल

*भारत में कोरोना वायरस तेजी से फैलने के बीच मल्टीपेशेंट वेंटिलेटर के आ जाने से मरीजों के इलाज में राहत मिलेगी मंजीत सिंह नेगी*

- अगले महीने ऐसे 5,000 वेंटिलेटर बनाए जाएंगे: डीआरडीओ
- देश में 30 से ज्यादा लोगों की कोरोना से हो चुकी है मौत

कोरोना वायरस पूरी दुनिया में कहर बरपा रहा है और इससे निपटने के लिए दुनियाभर की सरकारें लगी हुई हैं। इस बीच इस जंग में भारत को बड़ी कामयाबी मिली है। भारत ने ऐसे वेंटिलेटर का सफल परीक्षण किया है जिसे कई मरीजों के लिए इस्तेमाल किया जा सकता है।

डीआरडीओ के चेयरमैन सतीश रेड्डी ने आजतक के साथ खास इंटरव्यू में कहा कि वेंटिलेटर की कमी की स्थिति में इन वेंटिलेटर्स का इस्तेमाल कई मरीजों के लिए किया जा सकता है।

सार्वजनिक उपक्रम भारत इलेक्ट्रॉनिक्स लिमिटेड (BEL) अगले महीने के अंत तक ऐसे 5,000 वेंटिलेटर्स का निर्माण कर लेगा।

डीआरडीओ के चेयरमैन डॉक्टर सतीश रेड्डी ने कहा कि इन वेंटिलेटर का कई अस्पतालों और कई डॉक्टरों के समूहों की ओर से परीक्षण किया गया है और यह सही ढंग से काम कर रहा है। मेडिकल एक्सपर्ट्स ने हमें अधिक सुझाव दिए थे। बहुत संभव है कि अगले कुछ दिनों में हम नई विशेषताओं के साथ नए उत्पाद बनाने शुरू कर देंगे।

#### इंडिया टुडे का खुलासा

इस बीच देश में कोरोना वायरस से जुड़े जैसे-जैसे मामले बढ़ रहे हैं वैसे ही वेंटिलेटर्स की जमाखोरी और अधिक कीमत ऐंठने का गंदा खेल भी शुरू हो गया है। इंडिया टुडे इन्वेस्टिगेशन टीम ने अपनी जांच में इस खौफनाक हकीकत का खुलासा भी किया है। वेंटिलेटर फेफड़ों के नाकाम रहने पर ऑक्सीजन को मरीज के शरीर में पहुंचाता है। Covid19 के गंभीर मरीजों को ज़िंदा रहने के लिए इसकी ज़रूरत पड़ सकती है।

भारत में कोरोना वायरस तेजी से फैलता जा रहा है और अब तक 1,299 से ज्यादा केस सामने आ चुके हैं। देशभर में 1262 केस सामने आ चुके हैं और अब तक 36 लोगों की मौत हो चुकी है।

<https://aajtak.intoday.in/story/corona-virus-drdo-chairman-satheesh-reddy-india-successfully-tests-multipatient-ventilator-tackling-challenges-1-1176206.html>

## कोरोनावायरस से मुकाबले के लिए केंद्र सरकार की तैयारियां तेज, 2 महीने में बनाए जाएंगे 30,000 वेंटिलेटर, DRDO हर रोज तैयार करेगा 20,000 मास्क

**कोरोनावायरस: रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) अगले हफ्ते से हर दिन 20 हजार N99 मास्क बनाएगा. अभी देशभर के अस्पतालों में 11 लाख 95 हजार N95 मास्क स्टॉक में है।**

**परिमल कुमार**

### खास बातें

- कोरोनावायरस से जंग के लिए केंद्र सरकार ने की तैयारियां तेज
- 2 महीने में बनाए जाएंगे 30,000 वेंटिलेटर
- डीआरडीओ हर रोज तैयार करेगा 20,000 मास्क

**नई दिल्ली:** कोरोनावायरस के खतरे को देखते हुए ऑटोमोबाइल मैनुफैक्चरर्स (वाहन विनिर्माताओं) को वेंटिलेटर तैयार करने को कहा गया। स्वास्थ्य मंत्रालय के मुताबिक, भारत इलेक्ट्रॉनिक लिमिटेड (BEL) को अगले दो महीनों में लोकल मैनुफैक्चरर्स (स्थानीय विनिर्माताओं) के साथ मिलकर 30 हजार वेंटिलेटर बनाने के लिए कहा गया है। मौजूदा समय में देश के अलग-अलग अस्पतालों में 14 हजार से ज्यादा वेंटिलेटर कोरोनावायरस के मरीजों के लिए उपलब्ध हैं। नोएडा के Agva healthcare को एक महीने में 10 हजार वेंटिलेटर बनाने हैं। अप्रैल के दूसरे हफ्ते से इनके वेंटिलेटर की सप्लाई शुरू हो जाएगी।

जानकारी के मुताबिक, रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) अगले हफ्ते से हर दिन 20 हजार N99 मास्क बनाएगा। अभी देशभर के अस्पतालों में 11 लाख 95 हजार N95 मास्क स्टॉक में है। दो घरेलू मैनुफैक्चरर्स हर दिन 50 हजार N95 मास्क बना रहे हैं अगले हफ्ते तक ये हर दिन एक लाख बनाये जाएंगे। रेड क्रॉस ने आज 10 हजार पीपीई यानी पर्सनल प्रोटेक्टिव इक्विपमेंट डोनेट किया है। 20 लाख पीपीई के लिए साउथ कोरिया की एक फर्म को ऑर्डर दिया गया है। ये अगले दस दिन में सप्लाई शुरू करेगी और अगले हफ्ते ये फर्म हर दिन एक लाख पीपीई बनाएगी।

वहीं, 10 लाख PPE KIT के लिए सिंगापुर की एक फर्म को ऑर्डर दिया गया है। अभी फिलहाल देशभर के अलग अलग अस्पतालों में 3 लाख 34 हजार PPE हैं। 4 अप्रैल तक 3 लाख और PPE उपलब्ध होंगे। 12 अलग-अलग घरेलू कम्पनियों को 26 लाख PPE का आर्डर दिया जा चुका है। फिलहाल वो हर दिन 6 से 7 हजार बना रहे हैं जो 15 अप्रैल तक हर दिन 15 हजार हो जाएगा।

स्वास्थ्य मंत्रालय के आंकड़ों के मुताबिक, देश में अब तक कोरोनावायरस के एक हजार से ज्यादा मामले सामने आ चुके हैं। अब तक कोरोना संक्रमण के 1071 मामले सामने आए हैं। इस बीमारी से अब तक 29 लोगों की मौत हो चुकी है। हालांकि, थोड़ी राहत वाली बात यह है कि 100 कोरोना संक्रमित मरीज अब तक ठीक भी हो चुके हैं।

<https://khabar.ndtv.com/news/india/health-ministry-on-coronavirus-30-000-ventilators-to-be-made-in-2-months-drdo-will-make-20-000-masks-2202949>

## कोरोना से लड़ाई के लिए डीआरडीओ बनाएगा N99 मास्क, ऑटोमोबाइल कंपनियां बना रही हैं वेंटिलेटर

नई दिल्ली: देश की सेनाओं को युद्ध के लिए अचूक हथियार उपलब्ध कराने वाले डीआरडीओ (DRDO) ने कोरोना वायरस (Coronavirus) के खिलाफ लड़ाई में भी महत्वपूर्ण भूमिका निभाने का ऐलान किया है। स्वास्थ्य मंत्रालय (Ministry of Health) की ओर से दी गई जानकारी के मुताबिक डीआरडीओ अगले सप्ताह से N99 मास्क का प्रोडक्शन शुरू कर देगा। ये खास तरह के मास्क होते हैं इनका इस्तेमाल कोरोना का इलाज कर रहे मेडिकल स्टॉफ द्वारा किया जा रहा है।

### बड़े पैमाने पर मास्क का किया जा रहा है प्रोडक्शन

केंद्रीय स्वास्थ्य मंत्रालय की ओर से दी गई जानकारी के मुताबिक देश के अस्पतालों में 11.95 लाख N95 masks स्टॉक में हैं। इसके अलावा पिछले दो दिनों के दौरान 5 लाख मास्क बांटे गए हैं। सोमवार को भी लगभग 1.40 लाख मास्क बांटे गए हैं। 2 अन्य निर्माता भी हर दिन लगभग 50,000 N95 masks का उत्पादन कर रहे हैं। सरकार ने एक सप्ताह के अंदर हर दिन 1 लाख मास्क के उत्पादन का लक्ष्य रखा गया है।

### डॉक्टरों के काम आने वाले सूट का किया गया है इंतजाम

देशभर के अस्पतालों में डॉक्टरों और अन्य मेडिकल स्टॉफ के लिए कोरोना के इलाज में काम आने वाले 3.34 लाख कवर सूट (PPE) उपलब्ध कराए गए हैं। इसके अलावा विश्वभर से दिए गए डोनेशन के तहत 3 लाख कवरसूट 4 अप्रैल तक अस्पतालों को दे दिए जाएंगे।

### वेंटिलेटर्स बनाने के की गई ये प्लानिंग

कोरोना वायरस के इलाज के लिए हालत गंभीर होने पर वेंटिलेटर्स की जरूरत पड़ती है **डीआरडीओ** इसको ध्यान में रखते हुए सरकार बड़े पैमाने पर वेंटिलेटर्स बनवाने का प्रयास कर रही है। स्थानीय निर्माताओं के सहयोग से भारत इलेक्ट्रॉनिक्स लिमिटेड BEL को अगले दो महीनों में 30,000 ventilators बनाने के लिए कहा गया है। ऑटोमोबाइल निर्माताओं से भी ventilators बनाने के लिए कहा गया है। कई ऑटोमोबाइल कंपनियों ने जल्द ही वेंटिलेटर उपलब्ध कराने की बात कही है।

<https://www.zeebiz.com/hindi/india/n99-face-masks-to-be-manufactured-by-drdocoronaviruscovid19-23655>



## Indian Ventilators

# భారత వెంటిలేటర్లు

- దేశీయ తయారీకి వాహన సంస్థలు పై
- ఖరీదు కూడా బాగా తగ్గే అవకాశం
- డీఆర్డీఓ, భారత్ ఎలక్ట్రానిక్స్ సహకారం

ఈనాడు వాణిజ్య విభాగం



### దేశీయంగా వెంటిలేటర్లు.. 50,000లోపు జులైకు అవసరం .. 10 - 12 లక్షలు

వ్యాధిగ్రస్తులు, ప్రమాద బాధితులు, శస్త్రచికిత్స జరుగుతున్న వుడు ఊపిరి పీల్చుకోవడం వీలుకాని పరిస్థితుల్లో కృత్రిమ శ్వాసకు వీలు కల్పించే పరికరమే వెంటిలేటర్. దేశీయంగా ప్రభుత్వ/ప్రైవేటు ఆధునిక/పెద్ద ఆసుపత్రుల్లోని అత్యవసర చికిత్సా గదు (ఇంటెన్సివ్ కేర్ యూనిట్)లో అందుబాటులో ఉన్న వెంటిలేటర్ల సంఖ్య 50,000 లోపే ఉంటుందని నిపుణులు పేర్కొంటున్నారు. వీటిలోనూ కరోనా వైరస్ బాధితుల కోసం 14,000 కేటాయించారు. బాధితుల సంఖ్య పెరుగుతోందని, జులై నాటికి ఈ సంఖ్య భారీగానే పెరిగే అవకాశం ఉందన్న ఆందోళనలు వ్యక్తమవుతున్నాయి. అప్పటికి 10-12 లక్షల వరకు వెంటిలేటర్లు అవసరమని ప్రఖ్యాత విశ్వ విద్యాలయాల ఆధ్యయనంలో తేలింది. ప్రస్తుతం విదేశాల నుంచి దిగుమతి చేసుకుంటున్న, విడిభాగాలు దిగుమతి చేసుకుని - ఇక్కడ అసెంబుల్ చేస్తున్న ఒక్కో వెంటిలేటర్ ఖరీదు రూ.5-10 లక్షలు ఉంటుండగా, ఇంత భారీ సంఖ్యలో సమకూర్చుకోవడం సాధ్యమేనా అన్న ప్రశ్న తలెత్తుతోంది. ప్రపంచ దేశాలన్నింటికీ ఇవి అవసరం అవుతున్నందున, మనకు సరఫరా చేయడం అసాధ్యమే అని భావిస్తున్నారు. ఈ నేపథ్యంలోనే దేశీయంగా తక్కువ ఖర్చుతో వీటి డిజైన్ బాధ్యతను డీఆర్డీఓ వంటి సంస్థలు స్వీకరించగా, మహింద్రా అండ్ మహింద్రా (ఎం అండ్ ఎం), మారుతీ సుజుకీ వంటి వాహన తయారీ సంస్థలు వెంటిలేటర్ల తయారీకి ముందుకు రావడం భారతావని 'ఊపిరి' పీల్చుకునేందుకు కలిసొచ్చే అంశం.

### ప్రతి 100 మందిలో 10 మందికే అవసరం

కరోనా వైరస్ బారినపడినా, 80 శాతం మంది సాధారణ చికిత్సతో కోలుకుంటారని అంచనా. 10 శాతం మందికి సాధారణ ఆక్సిజన్ సిలెండరు సాయంతో చికిత్స చేయొచ్చని, మరో 10 శాతం మందికి మాత్రం వెంటిలేటర్లు అవసరమవుతాయన్నది అంచనా. శ్వాసకోశ-చూదయ సంబంధిత వ్యాధులతో బాధపడుతూ, కరోనా వైరస్ కు గురైన వారికి వీటి అవసరం ఎక్కువ ఉంటుంది.

### దిగుమతికి ఆంక్షలనే అవకాశంగా..

వెంటిలేటర్లు ఎగుమతి చేయడంపై పలు దేశాలు ఆంక్షలు విధించాయి. 8 రకాల నెన్చుర్లు, రిసెస్టర్లు, కెపాసిటర్లు, డయోడ్ల వంటి విడిభాగాలు చైనా, ఐరోపా, అమెరికా, జపాన్ వంటి దేశాల నుంచి దిగుమతి చేసుకుంటున్నారు. అందువల్ల భారీస్థాయిలో ఉత్పత్తి పెంచలేమని దేశీయంగా వీటిని అసెంబుల్ చేస్తున్న సంస్థలు చేతులెత్తేశాయి.

- ◆ ఒకేసారి అనేకమందికి సేవలందించగలిగే వెంటిలేటర్లను భారత రక్షణ పరిశోధనా సంస్థ (డీఆర్డీఓ) డిజైన్ చేసింది. మొదటి నెలలో 5,000, రెండో నెలలో 10,000 తయారు చేయగలమని తెలిపింది. ఈ డిజైన్ ను ఎం అండ్ ఎం సహా 9 కంపెనీలకు అప్పగించి, మరింత భారీ సంఖ్యలో తయారు చేసేందుకు కృషిచేస్తోంది.
- ◆ కరోనా వైరస్ చికిత్సకు సరిపడా ఆటోమేటెడ్ బ్యూగ్ వాల్వ్ మాస్క్స్ వెంటిలేటర్లను రూ.7500కే తయారు చేసేందుకు సిద్ధమవుతున్నామని, ప్రోటో టైప్ సాక్ష్యంగా మహింద్రా అండ్ మహింద్రా గ్రూప్ వైర్యన్ ఆసంద్ మహింద్రా ప్రకటించారు.

- ✦ మైసూర్ కేంద్రంగా పనిచేసే స్కాన్ రాయ్ టెక్నాలజీస్ 2 నెలల్లో లక్ష వెంటిలేటర్లు తయారు చేస్తామని తెలిపింది.
- ✦ 1-2 నెలల్లో 90,000 వెంటిలేటర్లు సరఫరా చేయాలని భారత్ ఎలక్ట్రానిక్స్ లిమిటెడ్ను ఆలోచ్య మంత్రిత్వ శాఖ కోరిందని సమాచారం.

**నెలకు 10,000 తయారీ: మారుతీ సుజుకీ**

ప్రభుత్వ విజ్ఞప్తి మేరకు వెంటిలేటర్లు, మాస్కులు, ఇతర వైద్య పరికరాల తయారీకి చర్యలు తీసుకుంటున్నట్లు మారుతీ సుజుకీ ఇండియా తెలిపింది. వెంటిలేటర్ల తయారీకి లైసెన్స్ కలిగిన ఆగ్నా హెల్త్ కేర్ తో ఒప్పందం చేసుకున్నట్లు వెల్లడించింది. నెలకు 10,000 వెంటిలేటర్లు తయారీ లక్ష్యమని వెల్లడించింది. సాంకేతికత, విజ్ఞయాలు, నిర్వహణ బాధ్యత ఆగ్నా దే. విడిభాగాలను తమ భాగస్వాములతో మారుతీ సుజుకీ చేయిస్తుంది. ఆర్థిక సాయమూ చేస్తుంది. 3 అంచెల మాస్కులను కూడా భాగస్వామ్య సంస్థ కృష్ణ మారుతీలో తయారుచేయించి, 20 లక్షల మేర ప్రభుత్వాలకు అందచేస్తామని పేర్కొంది.

# నమస్తే తెలంగాణ

Tue, 31 March 2020

## DRDO develops ‘multi-patient ventilators’ for critical COVID-19 patients



ఒకే వెంటిలేటర్ను ఎక్కువ మంది రోగులకు వినియోగించే విధానాన్ని మేం అభివృద్ధి చేశాం. దేశంలో రోగులు పెరిగి, వెంటిలేటర్లకు కొరత ఏర్పడితే మనం ఈ విధానాన్ని అవలంబించవచ్చు. ఈ తరహా వెంటిలేటర్ను పలు దవాఖానల్లో పరీక్షించాం. ఇది పనిచేస్తున్నది. వైద్య నిపుణులు కొన్ని సలహాలు అందించారు. కొత్త ఫీచర్లను జోడించి త్వరలోనే తుదిరూపు తీసుకొస్తాం.

-డాక్టర్ సతీశ్ రెడ్డి,  
డీఆర్ డివో చైర్మన్

## Centre asks auto firms to make ventilators; DRDO to make 20,000 masks a day

*The ministry informed that over 14,000 existing ventilators are earmarked for COVID-19 patients in various hospitals in the country while there are 1.19 million N-95 masks in stock*

The central government has asked automobile manufacturers to use their facilities to produce ventilators to boost the country's capacity of such machines in view of rising COVID-19 cases.

The Health ministry said that the Defence Research and Development Organisation (DRDO) will begin manufacturing 20,000 N-95 masks per day within the next week.

The ministry informed that over 14,000 existing ventilators are earmarked for COVID-19 patients in various hospitals in the country while there are 1.19 million N-95 masks in stock.

Additional 500,000 masks were distributed during the last two days and 140,000 were distributed on Monday.

"Automobile manufacturers have been asked to manufacture ventilators and they are working towards this end," the health ministry said in a tweet.

Besides, the Ministry of health has already asked the Bharat Electronics Limited (BEL), a public sector undertaking under the Ministry of Defence, to manufacture 30,000 ventilators in the next two months in collaboration with local manufacturers, the ministry said.

Agva Healthcare, Noida has also been given an order to manufacture 10,000 ventilators within a month. Their supplies are expected to commence in the 2nd week of April, the ministry said in another tweet.

Two domestic manufacturers are producing 50,000 N-95 masks per day. This is expected to go up to 100,000 per day within next week, the ministry tweeted.

It further said that 10,000 personal protection equipment donated by Red Cross have been received and are being distributed on Monday.

The number of COVID-19 cases climbed to 1071 across the country, while the death toll rose to 29, according to the Union Health Ministry.

[https://www.business-standard.com/article/companies/automobile-manufacturers-asked-to-make-ventilators-health-ministry-120033000668\\_1.html](https://www.business-standard.com/article/companies/automobile-manufacturers-asked-to-make-ventilators-health-ministry-120033000668_1.html)



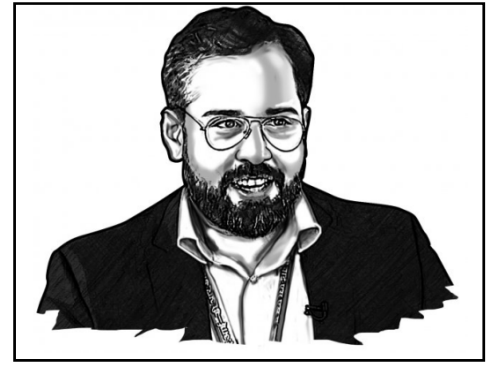
## A new defence lab aims to embed AI into the military

*By Akhil Kadidal*

At 33, Sunny Manchanda is one of the youngest Directors of a Defence Research and Development Organisation (DRDO) lab. Hand-picked by the Defence Minister's Science Adviser and DRDO top brass, Manchanda heads one of the five newly established DRDO Young Scientists' Lab (DYSL), which are meant to develop cutting-edge technologies. Operational since mid-April, Manchanda's lab, for instance, is to develop Artificial Intelligence (AI) and associated technologies. He wants to establish the lab as a "global centre of research" and "build products for the military and those that impact the lives of people in general", Manchanda tells DH's Akhil Kadidal

### **Can you tell us a little bit about your background?**

I started out in computer science with undergraduate studies before joining DRDO in October 2009 as a Research Scientist, where I worked on Netra, the Airborne Early Warning and Control System. By 2016, I was involved with managing the flight-testing phase of the programme, when I decided to head back to university. In 2018, I obtained a Master's in Computer Science at IIT Delhi, with a specialty in AI and Data Sciences.



### **Your specialization is in AI, but what makes it so attractive to you?**

I think it has been a long-standing (human) pursuit to understand the nature of our own intelligence. Most of us do not understand how human intelligence works. In aviation, for example, we understand the principles of flying, but the principles of intelligence are still hidden from us. That is what endeavouring in AI amounts to. It is a study of perhaps ourselves. There is also the great advantage of building technology to make the lives of people better.

### **Is there any particular area that you and your team is focusing on in AI?**

We are working on computer vision, speech, forensics and biometrics. Not only in terms of how to use AI technology for these kinds of areas, we are also looking at dual-use technologies for the defence sector and the civilian market as well.

### **Stephen Hawking was deeply concerned by AI, to the point that he saw it as a threat to the human race. Considering this, should we be all that proud about endeavouring in AI?**

I think these concerns might be a little premature. Essentially, what we do is that we build algorithms for machines to understand and interpret the world. But the concerns for machines to actually come up with strategic thinking and take over humans is science fiction. I don't think that will be a concern for the next at least 5-10 decades. That's too far to look into the future. But there has to be within the AI research and development community an open and responsible debate and communication about what to use AI for.

### **What prompted you to join the DRDO?**

I had a professor who left a lucrative job in the Bay Area (California) to teach at IIT. He said that one can of course always make a living, even as a fruit seller, but that making a living itself is not the bottom line. I could have contributed to profits at big companies, but my focus was to help with nation-building, making the lives of our soldiers better and making the lives of our people better.

### **So, you have a lot of freedom to experiment?**

The flexibility that we have here is what makes us unique. We have the freedom to choose the kind of problems that we want to tackle. It is a unique place in terms of fulfilling every scientist's aspiration to do good science and to help the country. We are grateful to have been given such an opportunity to serve and to be assured of all the support and resources required.

### **Are there any AI applications that you can talk about?**

We are also interested in developing solutions for internal security. We have a few projects going on, including one intended to enhance video imagery and another to determine deep fakes or doctored videos and audio.

### **What is at stake?**

If we are successful, a lot of our defence technology will have been given a boost even in the international market. Our final objectives are two-fold: make our military strong and help develop technologies of importance to humanity. We would also want to contribute to the global AI research community and publish in the topmost avenues.

<https://www.deccanherald.com/national/a-new-defence-lab-aims-to-embed-ai-into-the-military-819482.html>