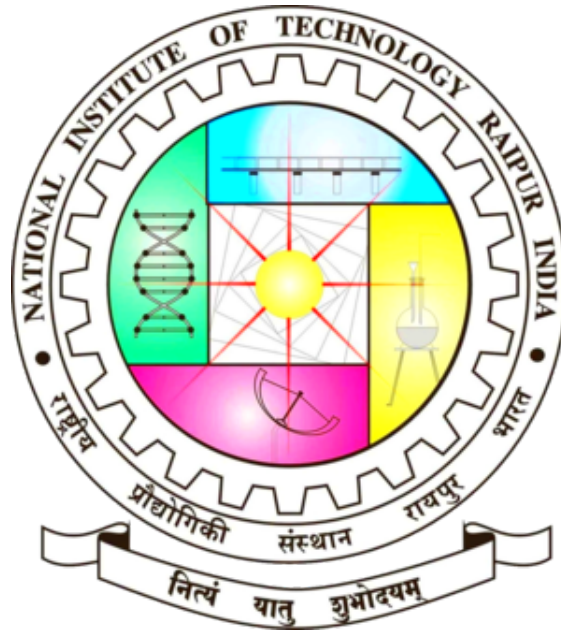


SOLUTIONS TO COVID-19 BY BIOMEDICAL ENGINEERS



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1 Ventilators



Patients who cannot breathe spontaneously need to be put on a ventilator. Ventilators are capable of replacing the breath function and patients in an advanced state of respiratory distress are usually intubated and sedated at the beginning of the treatment. Ventilators are capable of replacing the breath function and patients in an advanced state of respiratory distress are usually intubated and sedated at the beginning of the treatment. They are complex systems providing the healthcare professionals with a lot of flexibility to adapt the assisted breathing settings and to be able to wean recovering patients off the ventilator gradually. Modern ventilators are typically closed loop pressure controlled and capable of detecting spontaneous breathing to synchronise assistance for recovering patients. They also enable the control of the composition of the gas the patient breathes from normal air to 100 percent oxygen, usually taking their supply from the hospital's gas supply network but can also be coupled to oxygen tanks or oxygen concentrators if used in a setting where there is no gas network.

2 Biomedical Engineers' rapid response to PPE needs



According to infectious disease experts, face shields protect the face from

fluids, spray, and droplets, while extending the life of N95 face masks. The COVID-19 pandemic has depleted supplies of personal protective equipment (PPE) for healthcare professionals nationwide. Dr. Karilyn Larkin is a hematologist at The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute. When she and her colleagues experienced shortages of face shields, she turned to Ohio State engineers—specifically Mechanical and Aerospace Engineering Professor Carlos Castro—for help 3D printing face shields.

3 Mental Health



People are expected to quarantine and self-isolate, closing themselves off socially, as the number of mental health concerns rises amid the Covid-19 health crisis. For overcoming this many apps were developed like covid coach . Even many people were using AR and VR for their entertainment purpose. Doing exercise and yoga to keep themselves fit and while doing this the smart watch records all their biological activities for tracking their health

4 Testing and Tracking



When covid-19 pandemic ocured we needed as many testing kits as possible to tackle the virus.It includes rapid tests which took short time to declare the results as compared to pcr tests. Because of the risk of infection and quick transmission, the development of software and technical applications, such as telemedicine to watch the virus's evolution in the population, has gotten a lot of interest. Many testing kits were developed by the engineers. Like :

Smart iot covid-19 automator test booth hello for paperless and registra-tion and online sample linking.

5 Vaccines



The labs of Biomedical Engineering Professors Daniel Gallego-Perez and Natalia Higuera-Castro are developing novel, highly benign and targeted methods for the delivery of mRNA vaccines. While the researchers normally focus on cancer and regenerative medicine, their methods may be applicable to vaccine development and deployment.