

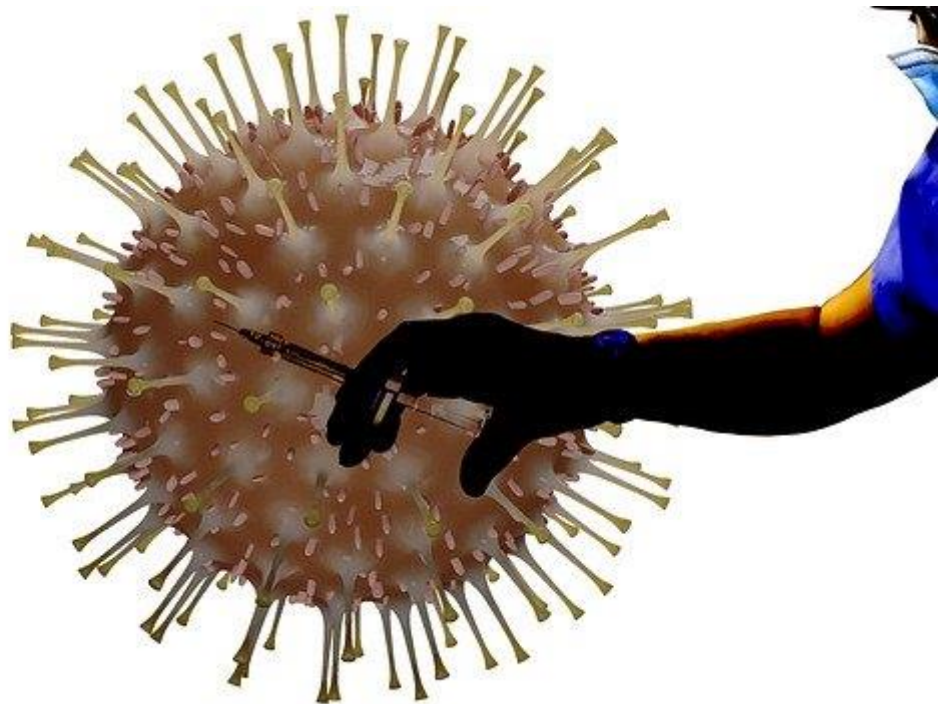
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## Nitric oxide treatment can be essential in the battle against COVID-19

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# OVERVIEW

- Post By : Kumar Jeetendra
- Source: George Washington University
  - Date: 27 Jul,2020

Nitric oxide therapy could be critical in the world's struggle against SARS-CoV-2, the coronavirus which causes COVID-19, according to a review by the George Washington University (GW).

Nitric oxide is an antimicrobial and anti-inflammatory molecule with key roles in pulmonary arterial role in the context of viral infections as well as other pulmonary diseases. In SARS-CoV-1 infection, which resulted in the outbreak of SARS (severe acute respiratory syndrome) in 2003, nitric oxide inhibited viral replication by cytotoxic reactions through intermediates like peroxynitrite.

Coronaviruses are RNA viruses that primarily infect birds or livestock, but can mutate to be very contagious and lethal in people. There's presently no documented therapy or vaccine for COVID-19. Not having a specific therapy and the high mortality rate of the virus dictate a urgent demand for therapeutics that may control the replication and rapid spread of the virus.

*Nitric oxide plays key roles in maintaining normal vascular function and regulating inflammatory cascades that contribute to acute lung injury (ALI) and acute respiratory distress syndrome (ARDS). Interventions that are protective against ALI and ARDS can play a critical role for patients and health systems during the pandemic.*"Adam Friedman, MD, interim chair and professor in the Department of Dermatology at the GW School of Medicine and Health Sciences and co-senior author of the review

The team, led by first author Nagasai Adusumilli, MBA, a fourth-year medical student at the GW School of Medicine and Health Sciences, examined data from between 1993 and 2020 about the pathogenesis of coronaviruses and using nitric oxide as a treatment for respiratory disease. The authors highlight the potential for inhaled nitric oxide contributing to better clinical results and alleviating the rapidly rising strain on health care capacity because of COVID-19.

As groups continue to print additional results with their respective nitric oxide platforms, the team urges dosing and protocol variations should be analyzed in assessing the research.

“With the development of COVID-19 because of catalyst with the ability to overwhelm the human body and our health care infrastructure, patients have a pressing need for effective agents that can slow the disease in their own bodies and in their communities,” Friedman stated.

The authors imply that whether nitric oxide’s effectiveness is illustrated for COVID-19, its use as a treatment could be critical in the fight against the pandemic.

Friedman has been collaborating with co-senior author Joel Friedman, MD, PhD, professor of physiology and biophysics and of medicine at Albert Einstein College of Medicine, on research related to the usage of nitric oxide at a broad range of health signs for close to 2 decades, and collectively are developing nitric oxide oxide-based therapeutics for COVID-19.

**Source:**

[George Washington University](#)

**Journal reference:**

Adusumilli, N.C., *et al.* (2020) Harnessing nitric oxide for preventing, limiting and treating the severe pulmonary consequences of COVID-19. *Nitric Oxide*. [doi.org/10.1016/j.niox.2020.07.003](https://doi.org/10.1016/j.niox.2020.07.003).