



**JAMES REYNOLDS, PhD**  
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*“Our Harrington advisory group provided invaluable insight in helping navigate the FDA approval process for testing new COVID-19 therapies.”*

## A CHANCE TO RENDER COVID **LESS HARMFUL**

**FOCUS:** First multipurpose drug to improve lung and heart function in COVID-19 patients.


A major cause of death in COVID-19 patients is the inability to utilize oxygen. This is seen both in the breathing problems (requiring ventilators or oxygen-supportive therapies) and disruptions in blood flow, which compromises oxygen delivery within the body. Both of these aspects of oxygenation are regulated by a class of molecules called S-nitrosothiols (SNOs). During infection, SNOs appear to decrease, so oxygen delivery is reduced and breathing becomes difficult. Dr. Reynolds and his team believe they’ve found a novel drug, ethyl nitrite (ENO) that can enhance and restore SNO bioactivity.

“In lung diseases, it seems that the level of SNOs goes down, and it takes a while for levels in the lungs and red blood cells to be increased, if at all,” Dr. Reynolds says. “Blood flow disruptions from COVID-19 occur throughout the body, leading to kidney and heart injuries. From previous and ongoing clinical trials, we have found that the administration of ENO can increase SNOs, leading to improvements in lung function and oxygen delivery.”

With significant assistance from Harrington Discovery Institute, Dr. Reynolds and his

team secured FDA clearance to test ENO in COVID-19 patients who are receiving oxygen support but are not yet on a ventilator. Dr. Reynolds expects to enroll the first series of patients at University Hospitals Cleveland Medical Center. The next step will be to secure additional FDA clearance for testing ENO in COVID-19 patients who are on ventilators.

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