

**BENJAMIN GASTON, MD**

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“Our Harrington team has provided invaluable support for our lab work and our translation, as well as with preclinical manufacturing development.”

GETTING COVID PATIENTS

OFF VENTILATORS

FOCUS: Novel agent to accelerate ventilator weaning for patients with COVID-19 lung infection.

When COVID-19 infections are fatal, it is often due to severe viral pneumonia. For these patients, mechanical ventilation is necessary, and the longer they require mechanical ventilation, the greater the chance that they will experience complications and die.

Unfortunately, the opioids these COVID patients need to suppress pain and anxiety also suppress their respiratory drive. Doctors often have to wake patients in order to get them to breathe off the ventilator, causing further pain and anxiety. In addition, prolonged mechanical ventilation during the pandemic has

resulted in the terrifying dilemma of insufficient numbers of ventilators.

Dr. Gaston and his team have developed molecules that stimulate breathing, which could help patients get off ventilators without requiring that their pain control medicine be stopped.

“Our lead agent, Sudaxine, is a novel respiratory stimulant that bypasses the bad effect of opioids and helps the body sense that it needs to increase breathing,” Dr. Gaston says. “We have found that Sudaxine appears to increase nerve signaling, which in turn increases both

the size of, and the number of breaths they take.” Sudaxine achieves this by targeting proteins in the brainstem, as well as the respiratory control sensor in the carotid body (a cluster of cells in the neck). These ultimately send signals to the muscles that control respiration.

With support from Harrington Discovery Institute, Dr. Gaston and his team seek FDA approval for an investigational new drug application. If all goes well, the result will be a therapeutic that helps get COVID-19 patients, and other patients with respiratory failure, off of ventilators.

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