

Original: August 2020 | Updated: November 2025

SAGE Rebreather™ Executive Summary

Active carbon dioxide (CO₂) manipulation should be a game-changing opportunity for improving the health of well over one-billion people world-wide. As CO₂ is the chief hormone of the entire body, management of it, by way of rebreathing, provides the platform to achieve substantial health benefits across a wide spectrum of disease states. Our SAGE CO₂ Rebreather™ mask represents a technology platform, that safely and gently, increases one's inhaled CO₂ without having to rely on bulky canisters of expensive and regulated gas (decades of medical literature have already demonstrated innumerable CO₂ benefits).

With only slight modifications from the core design, our SAGE Rebreather™ should serve multiple, seemingly unrelated markets: Specifically, CO₂ physiology and research show promise protecting the brain from Traumatic Brain Injury (TBI), reversing the deleterious effects of TBI after the fact, overcoming sleep apnea, eliminating high-altitude illness, and overcoming “dizzy diseases” known as POTS and Orthostatic Intolerance (OI). Notably, we have prototypes to alter the risk of Sudden Infant Death (SIDS). A staggering number of lives should be improved or saved by this technology.

Our team discovered that Nature had perfected a basic physiologic mechanism which became the basis of our means of recycling and modulating one's own CO₂ levels. We then set out to protect these concepts with five issued patents, and four patents pending (and future ones anticipated). Given our favorable FDA classification, and literally millions of years of Natural Selection (anticipating the safety and efficacy of our designs), we need only small, claim by claim, FDA guided studies to enter each successive market.

The efficacy of the rebreathing technology has already demonstrated proof-of-principle with human run-in studies for Postural Orthostatic Tachycardia Syndrome (POTS), Altitude Sickness, and an NIH funded, human study for Obstructive Sleep Apnea (OSA). The implications of our discovery should dramatically reduce the more than \$500 billion dollars the world presently spends in our served markets.

David Smith MD (DrDave™)
Chief Science Officer
Delta Chase LLC