

## Intermittent Supplemental Normobaric Oxygen Therapy for Acute, Subacute, or Chronic Brain Injury

The intermittent application of supplemental oxygen by nasal cannula or mask has precedent in clinical practice for over 30 years. Dr. Keith Van Meter of New Orleans had success with this in the 1990s in the treatment of patients with chronic extremity ulcers whom had partial success with hyperbaric oxygen therapy, but whom had exceeded typical reimbursement limits. Those patients experienced continued healing with supplemental oxygen therapy by nasal cannula or mask at home on a daily basis. Dr. Richard Neubauer applied supplemental mask oxygen intermittently at a nursing home in combination with HBOT over a 24 month period to a 60 year old patient in 1990 who was 14 years post severe stroke. The case is presented in the Lancet (Neubauer RA, et al. Lancet, 1990;335:542).

Between 2001 and 2015 Dr. Harch continued this practice in select cases with chronic brain injuries of various etiologies until the application to 2 y.o. drowning patient Eden Carlson in 2016. Eden Carlson was prescribed **100% oxygen at 2 liters/minute by nasal cannula for 45 minutes in the morning and 45 minutes in the late afternoon or evening, 7 days/week**, for over 3 weeks with noticeable neurological improvement [see video in Harch PG, Fogarty EF. Med Gas Research, 2017;7(2):144-149]. Since this successful application to Eden Carlson dozens of children with drowning and hypoxic ischemic encephalopathy worldwide have experienced neurological improvement with the same application of supplemental oxygen.

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