

Hypocapnia

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Hypocapnia or Hypocapnea, sometimes incorrectly called acapnia, is a state of reduced carbon dioxide in the blood. Hypocapnia usually results from deep or rapid breathing, known as hyperventilation. Hypocapnia is the opposite of hypercapnia. Even when severe, hypocapnia is normally well tolerated. However, hypocapnia causes cerebral vasoconstriction, leading to cerebral hypoxia and this can cause transient dizziness, visual disturbances, and anxiety. A low partial pressure of carbon dioxide in the blood also causes alkalosis, leading to lowered plasma calcium ions and nerve and muscle excitability. This explains the other common symptoms of hyperventilation – pins and needles, muscle cramps and tetany in the extremities, especially hands and feet. Hypocapnia is sometimes induced in the treatment of the medical emergencies, such as intracranial hypertension and hyperkalaemia. Because the brain stem monitors the level of blood CO₂ in blood to regulate breathing, hypocapnia can suppress breathing to the point of blackout from cerebral hypoxia. Self-induced hypocapnia through hyperventilation is the basis for the deadly schoolyard choking game. Deliberate hyperventilation has been unwisely used by underwater breath-hold divers to extend dive time but at the risk of shallow water blackout, which is a significant cause of drowning. ([From the Wikipedia article Hypocapnia.](#))

Recent Publications on Hypocapnia:



- [Comparison of principal and independent component analysis in removing extracerebral interference from near-infrared spectroscopy signals.](#)
Near-infrared spectroscopy (NIRS) is a method for noninvasive estimation... 10th November, 2009
Helsinki University of Technology, Department of Biomedical Engineering- J Biomed Opt. 2009 Sep-Oct;14(5):054032. ([DOI Direct Link](#))
- [Effect of Hyper- and Hypocapnia on Cerebral Arterial Compliance in Normal Subjects.](#)
ABSTRACT BACKGROUND Changes in partial pressure of carbon dioxide (PaCO₂)... 6th November, 2009
From the Department of Clinical Neurosciences, Addenbrooke's Hospital,- J Neuroimaging. 2009 Nov 3. ([DOI Direct Link](#))
- [Effect of ventilation pressure on alveolar fluid clearance and beta-agonist responses in mice.](#)
High tidal volume ventilation is detrimental to alveolar fluid clearance... 6th November, 2009
Dept. of Veterinary Biosciences, The Ohio State Univ., 1925 Coffey Road,- Am J Physiol Lung Cell Mol Physiol. 2009 Oct;297(4):L785-93. Epub 2009 Aug ([DOI Direct Link](#))
- [Incidence of iatrogenic dyscarbia during mild therapeutic hypothermia after successful resuscitation from out-of-hospital cardiac arrest.](#)
To investigate the incidence of iatrogenic dyscarbia in survivors of... 6th November, 2009
Critical Care Medicine Research Group, Department of Intensive Care- Resuscitation. 2009 Sep;80(9):990-3. Epub 2009 Jul 7. ([DOI Direct Link](#))

- [Effects of exercise on intraocular pressure and ocular blood flow: a review.](#)
Glaucoma is a disease characterized by progressive optic neuropathy... 8th October, 2009
Department of Ophthalmology, Indiana University School of Medicine,- J Glaucoma. 2009 Aug;18(6):429-36. ([DOI Direct Link](#))
- [Bronchial asthma: advice for patients traveling to high altitude.](#)
This article examines the possibility of traveling to altitude for... 30th September, 2009
Universita di Ferrara , Centro Studi Biomedici Applicati allo Sport,- High Alt Med Biol. 2009 Summer;10(2):117-21. ([DOI Direct Link](#))
- [Increased Propensity for Central Apnea in Patients with Obstructive Sleep Apnea: Effect of nCPAP.](#)
RATIONALE: There is increasing evidence of increased ventilatory... 19th September, 2009
Sleep Research Laboratory, John D. Dingell VAMC, Division of Pulmonary,- Am J Respir Crit Care Med. 2009 Sep 17. ([DOI Direct Link](#))
- [Detection of carbon dioxide thresholds using low-flow sidestream capnography in ventilated preterm infants.](#)
BACKGROUND: Monitoring CO2 levels in preterm infants receiving mechanical... 18th September, 2009
Service de Medecine neonatale, Groupe Hospitalier Cochin-Saint Vincent de- Intensive Care Med. 2009 Nov;35(11):1942-9. ([DOI Direct Link](#))
- [Activation of the retrotrapezoid nucleus by posterior hypothalamic stimulation.](#)
The retrotrapezoid nucleus (RTN) contains chemically defined neurons... 16th September, 2009
Department of Pharmacology, University of Virginia, Charlottesville, VA- J Physiol. 2009 Nov 1;587(Pt 21):5121-38. Epub 2009 Sep 14. ([DOI Direct Link](#))
- [Vascular effects of intermittent hypoxia.](#)
Obstructive sleep apnea is characterized by repeated upper airway... 4th September, 2009
Vascular Physiology Group, University of New Mexico Health Sciences- ILAR J. 2009;50(3):282-8.
- [Breathing evaluation and retraining in manual therapy.](#)
Patients with back and neck pain commonly seek body work yet there are... 2nd September, 2009
- J Bodyw Mov Ther. 2009 Jul;13(3):276-82. Epub 2009 Mar 19. ([DOI Direct Link](#))
- [Bicarbonate-regulated soluble adenylyl cyclase \(sAC\) mRNA expression and activity in peripheral chemoreceptors.](#)
Peripheral arterial chemoreceptors in the carotid body (CB) are modulated... 30th July, 2009
- Adv Exp Med Biol. 2009;648:235-41. ([DOI Direct Link](#))
- [Regulation of cerebral blood flow during chronic hypoxia: a matter of balance.](#)
Respiratory-induced changes in the partial pressure of arterial carbon... 21st July, 2009
1 University of British Columbia Okanagan;- Exp Physiol. 2009 Jul 17. ([DOI Direct Link](#))
- [Development and implementation of a therapeutic hypothermia protocol.](#)
Two randomized controlled trials published in 2002 demonstrated that mild... 16th July, 2009
Harborview Medical- Crit Care Med. 2009 Jul;37(7 Suppl):S279-84. ([DOI Direct Link](#))
- [Prehospital hypocapnia and poor outcome after severe traumatic brain injury.](#)
BACKGROUND: The Brain Trauma Foundation (BTF) Guidelines for prehospital... 1st July, 2009
R Adams Cowley Shock Trauma Center, University of Maryland Medical- J Trauma. 2009 Jun;66(6):1577-82; discussion 1583. ([DOI Direct Link](#))

BioNews Results for Hypocapnia

- [Pulmonary thromboembolism \(Proceedings\)](#)
Thomson Veterinary Healthcare Communications: Oct 25 2009 1:25PM Matching: hypocapnia



Hypocapnia Patents:

- 5778872- [Artificial ventilation system and methods of controlling carbon dioxide rebreathing](#)
- 6192884- [Method and apparatus for supplemental oxygen delivery](#)
- 6296654- [Non-invasive aortic impingement](#)
- 6313155- [Composition and method for treating macular disorders](#)
- 6354292- [Elimination of vapour anaesthetics from patients after surgical procedures](#)
- 6354294- [Oxygen delivery system for portable ventilation](#)
- 6423751- [Upregulation of type III endothelial cell nitric oxide synthase by agents that disrupt actin cytoskeletal organization](#)
- 6439231- [Artificial ventilation systems and components thereof, and methods for providing, assembling and utilizing same](#)
- 6532959- [Ventilatory assistance for treatment of cardiac failure and cheyne-stokes breathing](#)
- 6558336- [Continuous intra-cranial pressure control](#)
- 6564799- [Multilumen filter](#)
- 6190872- [Method for identifying and monitoring patients at risk for systemic inflammatory conditions and apparatus for use in this method](#)
- 6180597- [Upregulation of Type III endothelial cell nitric oxide synthase by rho GTPase function inhibitors](#)
- 6165105- [Apparatus and method for training of the respiratory muscles](#)
- 5871008- [Miniature high-frequency ventilator](#)
- 5871517- [Convulsive therapy apparatus to stimulate and monitor the extent of therapeutic value of the treatment](#)
- 5971934- [Noninvasive method and apparatus for determining cardiac output](#)
- 5983891- [Artificial ventilation methods for controlling carbon dioxide rebreathing](#)
- 5983894- [Filter for a unilimb rebreathing ventilator](#)
- 5983896- [Respiratory conduit for a unilimb respiratory device](#)
- 6003511- [Respiratory circuit terminal for a unilimb respiratory device](#)
- 6030802- [Liquid reagent set for L-lactate determination](#)
- 6046170- [Therapeutic use of hemoglobin to treat head injury](#)
- 6147109- [Upregulation of Type III endothelial cell Nitric Oxide Synthase by HMG-CoA reductase inhibitors](#)
- 6612308- [Portable isocapnia circuit and isocapnia method](#)
- 6622725- [Rebreathing circuit to set and stabilize end tidal and arterial PCO2 despite varying levels of minute ventilation](#)
- 7178521- [Adjustable length breathing circuit](#)
- 7246620- [System for monitoring pilot and/or passenger oxygen saturation levels and estimating oxygen usage requirements](#)
- 7261105- [Breathing circuits having unconventional respiratory conduits and systems and methods for optimizing utilization of fresh gases](#)
- 7275541- [Breathing circuits having unconventional respiratory conduits and systems and methods for optimizing utilization of fresh gases](#)
- 7297546- [Methods for identifying and monitoring patients at risk for systemic inflammatory conditions, methods for selecting treatments for these patients and apparatus for use in these methods](#)
- 7299802- [Carbon dioxide delivery apparatus and method for using same](#)
- 7337776- [Methods for easing pain and anxiety from atrial or ventricular defibrillation](#)

- 7383105- [System and method for monitoring passenger oxygen saturation levels and estimating oxygen usage requirements](#)
- 7384751- [Methods of diagnosing muscle damage](#)
- 7418965- [Multilumen unilimb breathing circuit with detachable proximal fitting](#)
- 7100606- [Method of maintaining constant arterial PCO₂ and measurement of anatomic and alveolar dead space](#)
- 7090648- [External addition of pulses to fluid channels of body to release or suppress endothelial mediators and to determine effectiveness of such intervention](#)
- 7089937- [Determining suitable ventilator settings for patients with alveolar hypoventilation during sleep](#)
- 6644312- [Determining suitable ventilator settings for patients with alveolar hypoventilation during sleep](#)
- 6696480- [Upregulation of type III endothelial cell nitric oxide synthase by agents that disrupt actin cytoskeletal organization](#)
- 6708689- [Elimination of vapor anaesthetics from patients after surgical procedures](#)
- 6733556- [Antibacterial/antiviral filtering device for ventilation systems](#)
- 6737423- [Substituted heterocyclo-norbornylamino derivatives, processes for their preparation, their use as medicaments or diagnostics, and medicaments comprising them](#)
- 6799570- [Method of maintaining constant arterial PCO₂ and measurement of anatomic and alveolar dead space](#)
- 6845773- [Determining suitable ventilator settings for patients with alveolar hypoventilation during sleep](#)
- 6874500- [Breathing circuits having unconventional respiratory conduits and systems and methods for optimizing utilization of fresh gases](#)
- 6951217- [Ventilatory assistance for treatment of cardiac failure and cheyne-stokes breathing](#)
- 7077132- [Ventilatory assistance for treatment of cardiac failure and Cheyne-Stokes breathing](#)
- 7520279- [Pressure support ventilation of patients](#)

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