

E-NEWS

EDITORIAL NOTE – August 2026

The E-News is the monthly newsletter of CUHMA, the primary outlet to share news/announcements, upcoming events, abstracts of recent publications, job postings, professional perspectives, and images of relevant professional scenes. Submission of applicable content is welcome. New issues are released on the last business day of each month. Past issues are available at <https://cuhma.ca>. Direct correspondence to info@cuhma.ca.

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NEWS/ANNOUNCEMENTS

CUHMA Virtual Scientific Meeting 2026-2

New Directions in Diving and Hyperbaric Medicine

CUHMA will offer a second virtual scientific meeting in 2026 to facilitate community engagement. The special topics program will focus on emerging opportunities related to diving and hyperbaric medicine. The one-day event will be held on Saturday, October 24. There will be invited presentations, original research presentations, and open discussion. Registration information will be detailed in the October issue of the E-News and on the CUHMA website.

Call for Abstracts – CUHMA VSM 2026-2

Original research abstracts are invited for the October virtual scientific meeting. Novel research reports and case studies/series relevant to hyperbaric medicine or diving medicine/physiology/safety will be considered for oral presentation. The submission deadline is September 25. Abstracts should be in standard form: informative concise title, author list, affiliations list, and 250-word summary (introduction, methods, results, and conclusions). Send abstracts to neal.pollock.1@ulaval.ca.

Apeks Regulator Product Safety Recall

Apeks has issued a global recall affecting certain XL4, XL4+ and Ocea regulators after identifying a manufacturing defect in the second-stage spindle assembly that can restrict breathing gas flow at depths below 45 m. The issue affects specific regulators manufactured between April 2025 and April 2026. Regulators with serial numbers 250402212 through 260402893 are affected. The first two digits signify

the year of manufacture and the second pair signify the month). These regulators should not be used until they are inspected by an authorized Apeks Dealer or service center. Technicians will inspect and repair the unit free of charge using approved Apeks replacement components.

UPCOMING EVENTS

Canadian Association of Wilderness Medicine 2026

CAWM is a non-profit organization with the goal of connecting Canadian practitioners and researchers with an interest in wilderness medicine, and in promoting the field as an area of focus and specialization. The seventh annual conference will be held September 11-13 in Whistler, BC and virtually in a hybrid format. Pre-conference workshops will also be offered. Visit: <https://cawm.ca/cawm2026>.

CUHMA Online Safety Seminar - Save the Date

An online safety seminar will be held on September 23 at 1930 Eastern. Andrew Melnychenko will present "Examination of a hyperbaric chamber fire" to review the events, investigation, and findings related to the 2005 fatal chamber fire in Troy, MI.

Divescapes Scuba Conference 2026

The Divescapes scuba conference and exhibition will be held October 16-17 at the Evario Events Centre in Edmonton, AB. The Alberta Underwater Council program includes international speakers, workshops, and trade show booths. Visit: <https://www.divescapes.ca>.

UMC Introductory Diving Medicine Course 2027

Undersea Medicine Canada will offer a Level 1 'Introductory Course in Diving Medicine - Fitness to Dive' June 07-11 in Halifax, NS. An optional half-day pre-course will be held June 06 for those wanting additional preparation for the program. Upon successful completion of the course, physicians will qualify as CSA Z275.2-15 Level 1 Diving Medical Examiners and can have their names listed with the Diver Certification Board of Canada (DCBC) to conduct commercial diver medicals in Canada. This 40-h course has been accredited for 35 MAINPRO+ CME credits by the College of Family Physicians of Canada. The registration portal will open on January 15. Contact Dr. Debbie Pestell (drdeb1@ns.sympatico.ca; 902-225-8214) or visit: <https://underseamedicine.ca> for more information.

RECENT PUBLICATIONS

Gelius T, Möllby R, Bergdahl J, Ampanozi G, Tyr A. Medico-legal interpretations of gas on postmortem CT: a scoping review. *Int J Legal Med.* 2026 Jul 24. doi: 10.1007/s00414-026-03930-x. Epub ahead of print. PMID: 42493670.

The use of postmortem computed tomography (PMCT) in forensic investigations has increased during recent years. PMCT differs from clinical CT due to the inevitable manifestation of postmortem changes that varies significantly between cases. However, differentiating between gas with an antemortem origin (e.g., gas embolism) vs. gas with a postmortem (putrefactive gas) origin presents a critical challenge in forensic medicine. This scoping review evaluated how gas distribution patterns on PMCT may aid in determining gas origin. In accordance with PRISMA-ScR guidelines, searches were conducted in PubMed, Web of Science, and CINAHL. 10,133 records were identified, of which 28 studies met the inclusion criteria. Overall, evidence was limited and heterogeneous, with substantial variation in terminology, gas assessment methods and study populations. Evidence suggests that differentiating pathological gas from putrefactive, resuscitation-related artefacts, and postmortem effects such as off-gassing remains a significant diagnostic challenge postmortem. Nevertheless, certain early PMCT patterns may assist interpretation. Within the first 24 h postmortem, intravascular and cardiac gas more commonly reflect systemic or traumatic mechanisms, although putrefaction cannot be excluded. Isolated cardiac gas may result from resuscitation efforts, whereas combined cardiac and intrahepatic gas more strongly suggests decomposition. In diving fatalities, embolic gas findings may be compounded by postmortem off-gassing as well as decomposition changes, and should be interpreted alongside dive profiles and, where available, gas sampling. Small gas collections adjacent to laryngeal structures may indicate trauma when other sources and decomposition are excluded. Overall, integrating PMCT gas distribution with contextual information and ancillary analyses may help understand gas origin, but further targeted research is required.

Johnson-Arbor K. Mild and traditional hyperbaric oxygenation: clinical uses and safety considerations. *Undersea Hyperb Med.* 2026 Second Quarter;53(2):247-254. PMID: 42365945.

Introduction: Unlike traditional hyperbaric oxygen treatment, which involves the inhalation of 100% oxygen by individuals enclosed in a pressurized treatment chamber at greater than sea level, mild hyperbaric oxygen treatment is performed in a pressurized chamber using shallower treatment depths and lower oxygen concentrations. **Methods:** This narrative review examines the physiological differences between mild and traditional hyperbaric

oxygen treatment, the clinical uses of mild hyperbaric oxygen treatment, and the safety considerations of both treatment modalities. **Results:** The systemic hyperoxia induced by traditional hyperbaric oxygen treatment promotes wound healing but is associated with adverse events, including oxygen free radical damage. Mild hyperbaric oxygen treatment may benefit peripheral microcirculation, parasympathetic activity, and metabolism but has not been studied extensively as a wound treatment modality. Due to the lower oxygen concentrations used in mild hyperbaric oxygen treatment, the risk of oxidative damage may be lower with this treatment than with traditional hyperbaric oxygenation. However, both mild and traditional hyperbaric oxygenation are associated with potentially life-threatening adverse events, including chamber explosion and/or fire. Careful adherence to safety standards may reduce the occurrence risk of such incidents, but compliance with those standards is not universally mandated and may vary among facilities. **Discussion:** Traditional and mild hyperbaric oxygen treatment differ in physiology and clinical uses. Both treatments are associated with significant risks, but adherence to safety standards may reduce the incidence of adverse events and optimize patient care.

Roukema BY, van Waageningh HF, Briët RJP, Bremer HG, Reinartz SM. Malta Consensus statements on paranasal sinus disorders in scuba diving: results of a Delphi study. *Laryngoscope Investig Otolaryngol.* 2026 Jul 28;11(4):e70499. doi: 10.1002/lio2.70499. PMID: 42524214; PMCID: PMC13410743.

Objectives: To establish expert consensus on the diagnostic approach, treatment strategies, and fitness-to-dive assessment for divers with paranasal sinus disease, addressing the current lack of specific guidelines for this frequent diving-related disorder. **Methods:** A rapid, conference-based modified Delphi process was conducted with a panel of 14 Dutch otorhinolaryngologists, including four certified diving medicine specialists. Consensus was defined as more than 80% agreement. **Results:** The panel achieved consensus on recommendations across four domains. For diagnosis, a comprehensive ENT evaluation including nasal endoscopy is recommended; low-dose CT-imaging is advised for persistent or recurrent cases to identify anatomical obstructions. Primary management is conservative, adhering to EPOS guidelines. Functional endoscopic sinus surgery (FESS) is reserved for cases refractory to medical therapy, particularly those with anatomical obstruction. Postoperatively, it is advised to refrain from diving for a minimum of 8 weeks. Return to diving requires confirmed mucosal healing via endoscopy and a test dive under controlled conditions. **Conclusions:** This Delphi-based consensus provides practical, evidence-informed guidance for clinicians, bridging the gap in formal guidelines and promoting uniform evaluation and treatment strategies within diving medicine.

Resma SS, Hussain DA, Ripon RH, Rabbi F. Muddy Water Pneumonitis: An Emerging Occupational Lung Disease in Professional Divers. *Respirol Case Rep.* 2026 Jul 29;14(8):e70697. doi: 10.1002/rcr2.70697. PMID: 42534352; PMCID: PMC13420296.

Chronic occupational exposure to contaminated aquatic environments is an underrecognized cause of progressive lung injury. Recurrent aspiration of sediment-rich river water can lead to chronic inflammatory lung injury with possible environmental pathogen colonization and destructive lung disease, even in immunocompetent individuals. A 35-year-old non-smoking professional diver in a tropical mangrove region of the Sundarban, Bangladesh, with 17 years of exposure performing 10-15 daily dives in muddy saline mangrove water, presented with 1 year of progressive exertional dyspnea and intermittent cough. Water aspiration during mud collection was frequent; four coworkers reported similar symptoms. SpO₂ was 93% at rest, dropping to 89% after 700 m on a 6-min walk test, indicating exercise-induced desaturation despite preserved walking distance. Digital clubbing and bilateral coarse crepitations were present. HRCT showed diffuse nodules and a left upper lobe cavitory lesion; Mantoux and Interferon gamma release assay were negative. Pulmonary function revealed severe restrictive defect (TLC 39%, FVC 25%, DLCO 36%, RV/TLC 48%). BAL grew *Acinetobacter* sensitive to meropenem and amikacin. After 7 days of IV therapy, symptoms improved, but domiciliary oxygen was not feasible. The patient died 1 month later. Muddy water pneumonitis can cause progressive necrotizing lung injury in divers, likely representing a multifactorial process involving environmental particulate exposure with superimposed infection. It was worsened by socioeconomic constraints and highlights the need for occupational protection and early recognition.

Simayijiang H, Lin Y, Zhong T, Li Z, Zhang K, Long Y. Designing clinical research on hyperbaric oxygen therapy: a narrative review and practical methodological guide. *Trials.* 2026 Jul 13. doi: 10.1186/s13063-026-09895-x. Online ahead of print.

This article provides an overview of the main study designs for hyperbaric oxygen therapy (HBOT) clinical research. Based on study objectives, study types and use cases across different phases and settings are described, including before-and-after studies to detect early signals and feasibility, randomized controlled trials, including pragmatic RCTs, to confirm causality, multicenter stratified or adaptive designs to optimize protocols, and real-world studies to evaluate real-world effectiveness, safety, adherence, and health economic outcomes. To improve comparability and reproducibility, the following key elements are also proposed: the use of a pre-specified, pooled set of intervention parameters in each study (pressure, session duration, frequency, and overall course),

the establishment of consistent and feasible inclusion and exclusion criteria, and the creation of a multilevel outcomes framework focusing on objective clinical endpoints and patient-reported outcomes, including specific safety and adherence monitoring. To overcome common challenges in HBOT research-protocol heterogeneity, blinding difficulties, interindividual variability in responses, and limitations in evidence synthesis-the article recommends standardized multicenter templates, stratified randomization, a predesigned statistical analysis plan, and mechanisms for data registration and sharing to enable cross-study pooling and long-term follow-up. Finally, a stepwise research pathway is proposed that begins with signal detection and confirmatory studies, progresses through parameter optimization and practice expansion, and ultimately leads to the creation of standardized clinical pathways and generalizable results. The goal is to provide a concise, practical methodological reference for proposal writing, funding applications, and implementation planning, thereby supporting more rigorous HBOT research in neurorehabilitation, tissue repair, chronic disease management, and healthy aging, particularly where current evidence remains exploratory or heterogeneous. This article is not intended as a systematic review of HBOT efficacy; instead, it is positioned as a narrative methodological review that uses current evidence limitations to inform trial design, feasibility assessment, interpretation, and transparent reporting.

CUHMA-ACMHS is the Canadian voice for the advancement of hyperbaric and diving medicine throughout our country and beyond. Our activities include continuous medical education for physicians, nurses, respiratory therapists and anyone involved in the fields of hyperbaric and diving medicine. We are also promoting dissemination of clinical research, publishing position statements, liaising with related professional associations and government agencies. Our main goal is advocating on behalf of our patients. Our vision is to be the reference for the development and delivery of hyperbaric and diving medicine in Canada and beyond. Our mission is to promote excellence in hyperbaric and diving medicine through leadership in education, promotion of best practices and advocacy for our patients. Our values are excellence, leadership, collaboration, communication, and integrity.

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