



E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL BOARD NOTE – September 2010

Welcome to the August issue of the E-Slate. It offers a full roster of Academy business, events, job postings and funding opportunities.

The E-Slate is a newsletter from and for the scientific dive community. We welcome news, announcements, job postings, new publications, and images of underwater work. Please email submissions to aaus@disl.org. Current and past issues of the E-Slate are available at www.aaus.org.

NEWS/ANNOUNCEMENTS

AAUS Symposium 2011

Plans for the 2011 AAUS Symposium in Portland, ME October 9-15 continue to progress with a hotel contract and banquet venue in place. The Portland Regency will serve as the symposium hotel; AAUS room rates will be \$174 per night. The annual banquet will be held at The Portland Club, catered by The Black Tie Company; expect ticket prices to be comparable to previous years. The University of Maine Darling Marine Center (DMC) will serve as host for pre-conference workshops as well as the annual Diving Safety Officers Meeting and AAUS Business Meeting. Lodging at the DMC is very reasonable (\$45-60) and is available in either dormitory-style or guest-house fashion. For those who prefer more traditional lodging, a list of local hotels and inns will be made available. October is a beautiful time of year in Maine but also a busy tourist season. Consequently, symposium registration will begin in December 2010/January 2011. Plan to make travel and lodging arrangements early to avoid missing out on a great meeting. Look for additional information in future editions of the E-Slate or, contact Chris Rigaud at crigaud@maine.edu.

AAUS Conrad Memorial Award Candidates

Conrad Limbaugh was an underwater naturalist and chief diving officer for Scripps Institute of Oceanography, where he directed the diving program. He was killed in a scuba diving accident in the Mediterranean on March 20, 1960. Limbaugh graduated from Whittier College in 1948 and did graduate work at the University of California at Los Angeles before going to Scripps Institution in 1950. He was largely responsible for developing the diver-training program at Scripps, as well as many research techniques used by marine scientists. The AAUS Conrad Limbaugh Memorial Award for Scientific Diving Leadership is presented

annually to an individual who has made a significant contribution in diving safety and diving leadership on behalf of the scientific diving community. The award is open to any past or present member of the American Academy of Underwater Sciences. Nominations are provided by the AAUS general membership and voted on and approved by the AAUS general membership, annually. Current BOD members are not eligible during their term of office. Please cast your vote (one vote per AAUS member) and respond via the Member Clicks – Poll (www.aaus.org), before midnight PST on October 01, 2010 for award selection consideration. The Class of 2010 nominees is as follows:

Stephen C. Jewett

AWARD JUSTIFICATION: Stephen C. Jewett, Ph.D., is a Research Professor at the School of Fisheries and Ocean Sciences, University of Alaska Fairbanks. Since 1972 he has been conducting research on benthic ecology, trophic interactions, benthic impact assessments, Arctic ecosystems, pollution/contamination monitoring, and teaching scuba techniques for scientific diving. Most of his research has focused on impact assessment issues in marine waters, such as effects from El Niño, Kasatochi Volcano eruption, commercial trawling, log storage, offshore dredging, mercury and radionuclide contamination, Alyeska Pipeline Terminal operations, the *Exxon Valdez* oil spill, and offshore/onshore mining. Dr. Jewett has published 85 peer-reviewed journal articles/book chapters; with many as senior author. His honors include: the 2004 UAF Emil Usibelli Distinguished Research Award; the 2004 Wildlife Society Wildlife Publications Award for Outstanding Monograph (co-recipient); and the 2006 Fulbright Scholar: Senior Specialist in Environmental Science at Catholic University of the North, Chile. Over the past 38 years Dr. Jewett has conducted much of his research in both the Arctic and the Antarctic utilizing cold-water science diving techniques.

Richard Carey

AWARD JUSTIFICATION: Richard founded and coordinates an all-volunteer scientific dive team for the Magothy River Association (MRA), based in Severna Park, Maryland. Dick is a PADI Master Instructor, former U.S. Navy civilian engineer, retired chemical engineer and volunteer dive team leader for the National Aquarium in Baltimore (Baltimore, MD). In 2001, Dick formed what has become the MRA Scientific Dive team, serving as its founder and coordinator. Since its inception, the Scientific Dive Team as a community science program has achieved

notable recognition for its volunteer scientific dive program. Originally formed to assist the oyster restoration research efforts, it has grown to encompass many other areas. Volunteer divers recruited into the program are specially trained by certified scuba instructors, professional biologists and scientists, and scientific dive leaders to perform specific scientific diving projects supporting community science.

Jack Engle

AWARD JUSTIFICATION: With more than 3600 dives at the California Channel Islands alone, Jack is a walking (swimming) underwater encyclopedia! You can ask him any question about marine natural history and he'll have the answer. He's been diving all over the world and his expertise extends right through the intertidal. Jack has been a member of AAUS since its inception. Jack was a teaching assistant for underwater methods courses at Santa Catalina Island, California and involved with the hyperbaric chamber operation as a volunteer technician and then supervisor from its arrival (1974) until he left in 1989.

Mark Flahan

AWARD JUSTIFICATION: Mark has committed himself to improving scuba safety and training to the recreational and scientific diving community for over 30 years. He has worked tirelessly and devoted a great deal of his own time and money to support non-profit agencies like AAUS and NAUI serving on their board of directors and training their divers. In addition, he carries on the San Diego scientific diving tradition across town from where Conrad once taught. He brings prestige to the scientific diving community and should be recognized for his outstanding contribution to diving. Mark is a Past-President of AAUS.

John Reed

AWARD JUSTIFICATION: Since 1976 John has been very involved in the dive program at Harbor Branch Oceanographic Institution (HBOI) in Florida which has been an organizational member of AAUS since 1987. He started as a scientific lockout diver using helium-oxygen rebreathers and has been Dive Safety Officer and chairman of HBOI's Diving Safety Control Board since 1987. He has been instrumental in establishing a quality scientific dive program with a staff of 60 research and commercial divers. He has logged 35 deep-water lockout dives from *Johnson-Sea-Link* submersibles, >2000 scientific scuba dives, and more than 200 dives in the *Johnson-Sea-Link* and *Clelia* submersibles. He served on the AAUS Board of Directors from 1993-1995 and 1989-1990.

John is Senior Research Scientist at HBOI and is Principal Investigator for the Robertson Coral Reef Research and Conservation Program. His primary emphasis is research and conservation of deep and shallow water coral reefs, including deep water *Lophelia* and *Oculina* reefs, and

shallow water reefs of the Caribbean, Bahamas and Florida. He has been Chief Scientist for over 60 worldwide research expeditions. John also heads the Collections and Taxonomy Department for the Biomedical Marine Research Program (BMR). He is curator for HBOI's museum of biomedical collections (>30,000 deep and shallow water marine organisms), submersible videotapes and photographic archives. John's research on the deep-water *Oculina* coral reefs off Florida has resulted in over 60 publications and the establishment of a 300 nm² Marine Protected Area. His current research on deep-water *Lophelia* reefs and the discovery of >300 deep-water reefs off Florida may be instrumental in their protection as a proposed 23,000 nm² deep-water coral Habitat Area of Particular Concern. John received his Bachelor of Science from the University of Miami and Master of Science specializing in marine ecology from Florida Atlantic University in 1975.

Henry Fastenau

AWARD JUSTIFICATION: Henry has been the University of California Davis Diving Safety Officer since 1993. His responsibilities include oversight and direction of basic training through leadership level scuba courses. Henry was employed by the University of California Davis' Bodega Marine Lab (BML) in 1984 and appointed BML Dive Supervisor and member of the UC Davis Diving Control Board in 1985. His current diving activities include instruction, ocean instrumentation and fisheries studies. Henry became scuba certified in the mid-sixties and began scientific diving in 1972 at the California Institute of Technology. He is an instructor for NAUI, ANDI, DAN, ASHI and YMCA and a member of AAUS since 1985. Henry is a former AAUS BOD member.

Lloyd Austin

Lloyd was the Diving Safety Officer at UC Berkeley for many years, from the beginning of the program up until his retirement. He trained many divers who continued in the scientific community and was an AAUS member for many years. Lloyd's dedication to safety was extreme and legendary. Berkeley divers were known for many odd, individual and unique characteristics, all attributable to Lloyd. However, there was always a consistent theme, and that was dive safety. If there is anything that Lloyd should be remembered for, it is his dedication to safety. Imagine a driving instructor who actually got his student to never violate the speed limit. That would be Lloyd. The buddy team was sacrosanct. Fitness was mandatory. Adherence to dive tables absolute (although eventually he did start using a computer, but a conservative one of course).

Danny Gouge

AWARD JUSTIFICATION: Danny Gouge, the DSO for AAUS organizational member Virginia Institute of Marine Sciences (VIMS) retired after thirty years of service to the

scientific diving community. Danny is a past board member for the Academy serving as Statistics Chair in the early 1990s. Danny has been involved with the VIMS diving program since 1978. He Became the DSO for VIMS in 1982 and served in this capacity through retirement in 2007. Danny has authored three diving safety manuals for the Institute, and led the program to early AAUS organizational membership in 1987. Danny served on the AAUS Board of Directors from 1991-1992, served on the VIMS Diving Control Board and maintained both a diving instructor certification and a 100 ton US Coast Guard license from 1980-2007. His career highlights include a seven-day saturation in Aquarius (1995) and dives to the USS Monitor, with and without the Johnson Sea-Link submersible (1993). Danny recently retired to cave country in north-central Florida and has received the Abe Davis Safe Cave Diving Award issued by the National Speleological Society Cave Diving Section (2006). He remains active in diving through instruction, consulting services, AAUS membership, and frequent trips to the tropics.

Dennis Divins

AWARD JUSTIFICATION: Dennis Divins, the University of California Santa Barbara's DSO from 1970 to 2004 has not only taught thousands of divers, but has also inspired countless young biologists to pursue their careers in the marine world. His tireless dedication of the pursuit of safe diving practices while still taking the time to enjoy and respect the ocean is reflected in an impeccable safety record for the program he directed. Although retired, he continues to be a mentor, advocate and friend to many of the divers he has taught and remains active in the Santa Barbara diving community.

Diana Stellar

AWARD JUSTIFICATION: In the 20+ years she's been involved in marine science research and diving, Diana has taught a broad range of classes from Diving certification courses (Open Water certification through Divemaster and AAUS) to classroom based Marine Ecology and Organismal Biology courses. Additionally, she has been able to combine her passions for diving and scientific research by teaching several courses designed to help graduate students develop methods for subtidal research projects. Her enthusiasm for scientific discovery, ecology of marine communities, and the development of diving techniques and safety has made Diana Stellar an invaluable addition to Moss Landing Marine Laboratories where she has inspired many of the next generation's marine scientists by sharing her excitement for expertise in marine research diving.

Call for Papers – Maritime Archaeology

Administrators are seeking papers for presentation at the 22nd Annual Symposium on Maritime Archaeology and History of Hawaii and the Pacific to be held on February 18-21, 2011 in Hilo, HI. The symposium's theme is "Reading Coastal Footprints: Ecology and Maritime Archaeology in the Pacific." Papers pertaining to the following topics are preferred: applications of ecological models to archaeology, recent maritime archaeology fieldwork and general topics in maritime archaeology and maritime history. Abstracts should be no more than 300 words, include a title, and name(s) of presenter and affiliation. Deadline for submission: November 01, 2010. Additionally, two scholarships are available for students to attend the conference. Visit: <http://www.mahhi.org>.

FUNDING OPPORTUNITIES

Regional Ecosystem Prediction Program: Understanding Coral Ecosystem Connectivity in the Gulf of Mexico - Pulley Ridge to Florida Keys

NOAA's Center for Sponsored Coastal Ocean Research (NOAA/CSCOR), in partnership with the NOAA Office of National Marine Sanctuaries, Office of Ocean Exploration and Research (NOAA/OER), National Marine Fisheries Service Southeast Regional Office, and Gulf of Mexico Regional Collaboration Team, is soliciting proposals for a project under the Regional Ecosystem Prediction Program of up to five years in duration to conduct research to improve the understanding of population connectivity of key species between the southernmost portion of Pulley Ridge on the West Florida continental shelf and downstream to the coral ecosystems of the Florida Keys. Coral ecosystems upstream of Pulley Ridge can be considered if directly relevant to population connectivity or to provide context to the overall study. This information will be used to improve the ability of Gulf of Mexico resource managers to proactively develop strategies to manage and protect poorly understood mesophotic coral ecosystems, including coastal and marine spatial planning and the siting of marine protected areas and marine protected area networks for shallow and mesophotic coral ecosystems. One project is expected to be supported for up to five years, with an annual budget up to \$1,000,000. At no additional cost, up to 15 days per year for two years of time using the MolaMola/AUV will be provided by the NOAA/OER National Institute for Undersea Science and Technology. Additionally, NOAA/CSCOR has partnered once again with NOAA/OER to provide their expertise in administering appropriate technologies for field-based research to support your proposal such as advanced technical diving, autonomous underwater vehicles and remotely operated vehicles. Operational costs for conducting the research must

be included in the proposal. Full proposals are due October 21, 2010 at 3 pm EST. For more information visit:
http://www.blueplanetdivers.org/archives/2010/07/fy_2011_funding.php.

EQUIPMENT RECALLS

Recall of OMS Buoyancy Compensators

Ocean Management Systems (OMS) has issued a voluntary recall of 20,000 buoyancy compensators (BCs) due to faulty seal rings. Seal rings have been found to crack under pressure, compromising bladder integrity and placing divers at increased risk of drowning. BCs impacted by the recall were made in America, sold between May 2006 and August 2008. A list of model numbers and pictures of the BCs affected by the recall and information on the free repair process may be found at the OMS website. Visit: http://www.cdninfo.com/recall/oms_100428/oms_100428.html.

UPCOMING EVENTS

Maritime Heritage Awareness Workshops

The Alaska Office of History and Archaeology and NOAA's Office of National Marine Sanctuaries will co-present workshops on maritime heritage in Anchorage (September 9-11) and Juneau (September 14-16). The workshop is aimed at recreational divers, enforcement officers, archaeologists, historians and land managers. No diving required. Visit: <http://dnr.alaska.gov/parks/oha/maritimewrkshop/maritinewrkshp.htm> or contact Dave McMahan (dave.mcmahan@alaska.gov; 907-269-8723).

DAN Diving Medical Technician Course

A Diving Medical Technician (DMT) course will be held September 12-17 in Durham, NC. The program includes lectures and hands on experience at recompression facilities. Successful participants receive DMT certification through the National Board of Diving and Hyperbaric Medical Technology (NBDHMT). Visit: <http://www.diversalernetnetwork.org/Events/Event.aspx?EventID=810>.

NOAA Dive Training

The NOAA Diving Program is offering two courses this month: Working Diver (September 13-October 01) and Divemaster (September 20-October 01). Both courses will be held at the NOAA facility in Seattle, WA. Courses are exclusively for NOAA staff, NOAA-contractors, other federal, state, and local government employees. Visit: <http://www.ndc.noaa.gov/tc.html>.

Heritage Awareness Diving Seminar

The Florida Public Archaeology Network (FPAN), Florida Bureau of Archaeological Research (BAR) and Florida

Aquarium (FLAQ) are presenting a Heritage Awareness Diving Seminar September 14-15 in Tampa, FL. The focus is on educating scuba instructors how to proactively protect shipwrecks, artificial reefs and underwater cultural sites. The two-day course includes one day of classroom work and one day of field training. Completion of the seminar will enable trainers to teach the Heritage Awareness Specialty Course (authorized by NAUI, PADI and SSI). Contact: Jeff Moates, Florida Public Archaeology Network, West Central Regional Center, jmoats@cas.usf.edu, 813-396-2327. Visit: <http://www.flheritage.com/archaeology/underwater/hads.pdf>.

San Diego UnderSea Film Exhibition

The 11th Annual San Diego UnderSea Film Exhibition will be held September 17-18 at Irwin M. Jacobs Qualcomm Hall, 5775 Morehouse Drive, San Diego, CA. Each evening will feature a different program showcasing 14-16 five-minute-long international underwater films. Visit: <http://sdufex.com/index.html>.

Underwater Cultural Heritage in Mexico Course

UNESCO and the Mexican Instituto Nacional de Antropología e Historia (INAH) are cosponsoring a course on the protection of underwater cultural heritage in Mexico. The course will run from September 27 to October 08, 2010 and will include a discussion of methods of underwater archaeology and site preservation. Lectures will be provided in Spanish language only. Participants must have a basic diving certification. A regional meeting on the same topic but aimed at site managers and national authorities will be held in December, 2010 in Cozumel, Mexico. Visit: <http://www.unesco.org/en/underwater-cultural-heritage/>.

UW Spatial Ecology of Salish Sea Benthos Course

The University of Washington Friday Harbor Laboratories is offering a course in Spatial Ecology of Salish Sea Benthos September 29 to December 10, 2010. The course will investigate the application of marine ecological and geophysical techniques, seabed sampling and underwater video and still photographic sampling in marine benthic habitat characterization. Contact Dr. Kenneth Sebens (sebens@u.washington.edu) or visit: <http://depts.washington.edu/fhl/student-Autumn2010.html>.

AAUS Board of Directors Meeting

The AAUS BOD will meet October 9-10 in La Jolla, CA. Further information is available from aaus@disl.org.

DAN Diving and Hyperbaric Medicine Course

The 68th DAN Diving and Hyperbaric Medicine Course will be held October 23-30 at the Presidente Intercontinental Hotel on the island of Cozumel. This six-day course is designed primarily for physicians, emergency medical personnel, paramedics and nurses. Instructors, divemasters and other non-medical, diving-related personnel with

interest in diving medicine will also find the course valuable. The course is certified by the Undersea and Hyperbaric Medical Society for continuing education credit. A special dive package supplements the course. Contact DAN Education at 919-684-2948, ext. 555 (toll free: 800-496-446-2671, ext. 555) or cme@dan.org. Visit: <http://www.diversalertnetwork.org/Events/Event.aspx?EventID=799>.

Dive Rescue International

DRI offers several training programs in aquatic emergency preparedness for public safety professionals. Courses include: Animal Rescue in Floods, Dive Rescue I, Evidence Recovery Operations, Interspiro Technician, Light Salvage and Recovery, Marine Sonic Sonar, Public Safety Diver Survival, Underwater Crime Scene Tech I, Visual Cylinder Inspection, and Water Operations Officer Development. Courses are taught at various US locations. Visit: http://www.diverescueintl.com/training_calendar.aspx.

Women Divers Hall of Fame Scholarship

WDHOF is offering four scholarships and nine training grants in 2010. Awards are available to women and men of all ages who wish to pursue higher education and training, further their career goals and find opportunities in aquatic and diving-related industries. November 15 deadline. Visit: <http://www.wdhof.org/scholarships/scholarships.shtml>.

JOB OPPORTUNITIES

Senior Aquarist, Monterey Bay Aquarium

The Senior Aquarist is responsible for all aspects of aquarium plant and animal husbandry for the area to which they are assigned. Specifically this includes the design, set-up, care and maintenance of live exhibits, disease recognition and treatment, life support system construction and operation, field collecting and species identification and knowledge. In addition to the Senior Aquarist's scheduled duties, he or she is highly encouraged to work independently to contribute to various research and development projects and other investigations aimed at furthering the quality of Monterey Bay Aquarium's live exhibitions. The Senior Aquarist, when directed, will also be responsible to carry out the daily tasks of the Associate Curators during their absence. The Senior Aquarist also trains and supervises Aquarist II, Aquarists, Aquarist Trainees, Assistant Aquarists and Volunteers as needed or directed. Scuba certification is required. Visit: https://montereybayaquarium.snaphire.com/jobseeker/safelink=JSJDM&O_p=QCxk7&.

Sea Otter Aquarist II, Monterey Bay Aquarium

The Sea Otter Aquarist II is responsible for performing all aspects of sea otter husbandry duties without direct supervision. Husbandry responsibilities include: daily care of sea otters, preparing and dispensing food, employing operant conditioning techniques for husbandry purposes,

comprehensive record keeping, providing veterinary care (under the supervision of a licensed veterinarian) and when necessary, moving animals to holding areas. Other duties include cleaning and maintenance of otter exhibit areas, which includes 1-2 scuba dives per week and assisting with plant and invertebrate collections. In addition, since some of the sea otter feedings are public presentations, the employee will be required to interact with the visitors. The Sea Otter Aquarist II maintains all responsibilities and skills from the Sea Otter Aquarist position, and also has the knowledge and ability to act as a resource and sometimes supervise Sea Otter Aquarists, Assistant Sea Otter Aquarists and volunteers. Visit: <https://montereybayaquarium.snaphire.com/jobseeker/safelink=JSSAJOB&>.

Dive Officer, Monterey Bay Aquarium

The Monterey Bay Aquarium (MBA) is seeking a Dive Officer/Volunteer Diver supervisor. The Dive Officer oversees the aquarium's volunteer dive program and diving safety programs. The Dive Officer is responsible for developing and enforcing policies and procedures to ensure the safety of volunteer and staff divers. He/She supervises the volunteer diver program including selection, development, training and scheduling. The Dive Officer assists in overall dive program management and supervises daily dive operations. The ideal candidate will hold the following nationally recognized certifications: open water scuba instructor, Reef Check California instructor, scuba equipment repair technician for equipment approved for use at MBA, DAN oxygen administration instructor, CPR/First aid/AED instructor, and divers with disabilities instructor. Preferred experience includes undergraduate college degree, scientific diving instruction, and small boat handling skills, Minimum of two years experience working as a Dive Safety Officer at a public aquarium or similar environment, Supervising and coordinating skills, excellent oral and written communication skills, including a working knowledge of computer processing, database programming and operations, Valid driver's license with an insurable driving record and ability to pass a scientific diving physical examination. Interested parties should apply online:

<https://montereybayaquarium.snaphire.com>.

Maintenance Diver, Part-Time Georgia Aquarium

The Georgia Aquarium is seeking a part-time maintenance diver to work in their Atlanta, GA facility. Major duties are split into two categories: commercial and scientific diving work. Commercial duties include daily aquarium husbandry, inspection and preventative maintenance of aquarium exhibits and equipment ordering and inventory. Scientific duties include participation in and assistance with advanced dive personnel training, monitoring of aquarium species and sample collection, and implementation of dive safety measures. The diver may also serve as a liaison between the Georgia Aquarium and guests, media and the general public. Candidates must hold an Advanced Open Water (or higher)

diving certification and have a minimum of two years experience in aquarium or scientific diving. Additional requirements relate to first aid certifications, equipment service/technician certifications and proficiency in Microsoft Office Products. For more information visit: <http://partners.georgiaaquarium.org/all/Lists/Join%20Our%20Team/DispForm.aspx?ID=71>.

Director of UW Archaeology Survey/Excavation

The Ecomuseum of the Cape of Cavalleria, Menorca, Spain is seeking a director for their underwater archaeology program in the Balearic Islands. The director is responsible for overseeing survey and excavation activities and submitting an annual report of Ecomuseum's archaeological activities. Candidates must be fluent in English and Spanish, practiced in teaching and archaeological techniques and have two years experience as a director of underwater archaeology surveys and excavations. Interested individuals should send a CV and cover letter to saniser@arrakis.es. Closing date: October 01, 2010. Visit: <http://www.bajr.org/Employment/UKEmploymentDetails.asp?ID=8326>.

Smithsonian CUSP Program Internships

The Smithsonian's Cities Under the Sea Program (CUSP) is seeking interns to assist with geoarchaeological studies of submerged Greek and Roman sites in the Mediterranean. Applicants can be upper level undergraduate students, graduate students or post-doctoral level candidates, preferably with dual training in science and archaeology. Internships will start in the Fall, Winter-Spring or Summer periods, lasting from 3-12 months. The next deadline for applications is October 01, 2010. Visit: http://www.nmnh.si.edu/rtp/other_opps/internship_projects.html.

Maritime Archaeology Assistants

Academic and fieldwork assistant position open for current or potential East Carolina University students. Candidates will be responsible for compiling maps and literature, planning lessons, conducting public education programs and preparing fieldwork experiments for ongoing projects in Africa and South Carolina. Interested students must qualify for Federal Work Study positions. Visit: <https://ecu.peopleadmin.com/applicants/jsp/shared/frameset/frameset.jsp?time=1279291470872>.

NEW PUBLICATIONS

Gempp E, Blatteau JE. Preconditioning methods and mechanisms for preventing the risk of decompression sickness in scuba divers: a review. Res Sports Med. 2010; 18(3): 205-18.

Scuba divers are at risk of decompression sickness due to the excessive formation of gas bubbles in blood and tissues following ascent, with potentially subsequent neurological injuries. Since nonprovocative dive profiles are no guarantor of protection against this disease, novel means are required for its prevention including pre-dive

procedures that could induce more resistance to decompression stress. In this article, we review the recent studies describing the promising preconditioning methods that might operate on the attenuation of bubble formation believed to reduce the occurrence of decompression sickness. The main practical applications are simple and feasible pre-dive measures such as endurance exercise in a warm environment, oral hydration, and normobaric oxygen breathing. Rheological changes affecting tissue perfusion, endothelial adaptation with nitric oxide pathway, up-regulation of cytoprotective proteins, and reduction of preexisting gas nuclei from which bubbles grow could be involved in this protective effect.

Winkler BE, Tetzlaff K, Muth CM, Hebestreit H. Pulmonary function in children after open water scuba dives. Int J Sports Med. 2010 Jul 30. [Epub ahead of print].

An increasing number of children and adolescents is diving with self-contained underwater breathing apparatus (scuba). Scuba diving is associated with health risks such as pulmonary barotrauma, especially in children and in individuals with airflow limitation. As no data has been published on the effects of open-water diving on pulmonary function in children, the objective of this study was to evaluate the effects of scuba dives on airflow in children. 16 healthy children aged 10-13 years underwent spirometry and a cycle-exercise challenge while breathing cold air. They subsequently performed dives to 1-m and 8-m depth in random order. Pulmonary function was measured before and after the exercise challenge and the dives. There were statistically significant decreases in FEV₁, FVC, FEV₁/FVC, MEF₂₅ and MEF₅₀ after the cold-air exercise challenge and the dives. Changes in lung function following the exercise challenge did not predict the responses to scuba diving. In three children the post-dive decrements in FEV₁ exceeded 10%. These children had a lower body weight and BMI percentile. Scuba diving in healthy children may be associated with relevant airflow limitation. A low body mass might contribute to diving-associated bronchoconstriction. In the majority of subjects, no clinically relevant airway obstruction could be observed.

The mission of the American Academy of Underwater Sciences is to facilitate the development of safe and productive scientific divers through education, research, advocacy, and the advancement of standards for scientific diving practices, certifications, & operations.

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