



The DiveMed Newsletter, April 30, 2002

* Translation service at bottom of the page.



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* This newsletter is in the form of a web page. The table of contents are links to specific subheadings of the newsletter. The entire newsletter is located at this address: <http://www.gulftel.com/~scubadoc/archapr3002.html>. This web page will be removed from the server with the next edition in about two weeks at which time the links in the Table of Contents will become inoperative - the links in the body of the newsletter will still function. You may keep a copy of the newsletter by emailing yourself a copy (File>send page> your email address).

---Note from scubadoc

<http://www.gulftel.com/~scubadoc/archapr3002.html#Note>

Hot tub/shower discussion, epilepsy discussions, chest x-ray of diver who had seizure, consensus attempts, asthmatics and diabetics.

---Pearl of the Day!

<http://www.gulftel.com/~scubadoc/archapr3002.html#Pearl>

Inherent Unsaturation

---Question(s) of the Week

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Effect of Plavix on DCS. Answer by Martin Quigley, MD

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<http://www.gulftel.com/~scubadoc/archapr3002.html#Links>

A Comparison of the Validity of Different Diagnostic Tests in Adults With Asthma*, Massive coral bleaching strikes Great Barrier Reef, Emergency Medicine's Home Page, Emergency Indications for Hyperbaric Oxygen, A year's experience of Irukandji envenomation in far north Queensland , Underwater application of nasal decongestants: method for special operations, SES Current Expeditions, Hyperbaric Medical Societies Forum (German), OSHA, on Commercial Diving, DCIEM Decompression Theory

● ---Mailbox

<http://www.gulftel.com/~scubadoc/archapr3002.html#Mailbox>

SOCOM Biomedical R+D Update, Environmental Legislation, KMI's 8th Annual Fiberoptic Submarine Systems Symposium, change in the URL for the 2002 Safety Survey of Recreational Scuba Divers, DAN Research Announces Top Projects for Summer of 2002

● ---Services on Our Web Site

<http://www.gulftel.com/~scubadoc/archapr3002.html#Services>

Download article about longterm effects of Diving (pdf file). This is a pdf file of our web page on the subject which was published in Medscape.

● ---Changes in Our Web Site

<http://www.gulftel.com/~scubadoc/archapr3002.html#Changes>

Web page with all changes in the web site in past two weeks.

<http://search.freefind.com/find.html?id=9763814&w=0&p=0>

● ---Humor

<http://www.gulftel.com/~scubadoc/archapr3002.html#Humor>

Stories and jokes. Not for the children or church ladies.

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## Note from Scubadoc

Good Morning!

In the process of writing the material for my web site, answering questions on the web and for a scuba magazine and moderating several bulletin boards on diving medicine I regularly run into questions to which there are just no good answers. This inevitably leads to opinions being presented by individuals as if they were fact. I encountered one of these debates inadvertently last week - a thread on Scuba Board about whether or not a hot tub or shower after a dive was harmful. I have stated on one of my web pages on DCS risks that there is **no evidence** that taking a hot shower is harmful and this had been quoted by an individual embroiled in the debate (one of our subscribers, Russ Berger). This was hotly debated and Russ has sent a letter requesting more information. Here is my reply:

"There does not seem to be much of an argument about my statement in my web page that there is no evidence that hot tubs (or hot showers) cause an increase in decompression illness. I actually cannot find any evidence in the form of good studies that would indicate one way or the other. Most of the information is **conjecture** as in information given by a "consensus" of DAN physicians suggesting a 30 minute wait before showering or entering the hot tub. .

The item about hot showers and tubs on my web page was not mentioned in any relationship with the other known causes of decompression sickness listed, nor was it relative to any study, but was for information to those interested. <http://www.gulftel.com/~scubadoc/prvndcs.htm>

One study (mentioned, but not cited ) on one of the boards did indicate that Doppler-detectable gas bubbles were released into the blood stream after rewarming, but that this **did not provoke decompression sickness**. (Dr. Michael Powell, NASA physiologist, PhD)

Dr. Richard Vann, in the chapter on Mechanisms and Risks of Decompression in Bove's 'Diving Medicine', p.156, under perfusion effects - describes **warm water immersion increasing nitrogen elimination and decreasing DCS from 90% to 20%** in oxygen breathing before altitude decompression. Exercise reduced the incidence from 63% to 0%. Cold water immersion caused an increased incidence of DCS. The question of rewarming is entirely different and has different answers when immersing in hot/warm water for the treatment of hypothermia. Fears of an afterdrop of the core temperature with arrhythmias has been uppermost. However, **Yancey Mebane**, in Bove, Diving Medicine , p.211 states that recent studies show that the hypothermic diver may not experience cooling of the heart when immersed limbs and all in a hot bath. DCS is not mentioned as an increased risk.

In opposition to the above, heating of the skin is said to cause **vasodilation of the skin vasculature with a shift of blood from the muscles to the skin and a resultant decrease in nitrogen off-gassing** (Michael Powell, PhD - scuba boards, no references cited).

As a matter of fact - I have searched Medline in every way imaginable for references to support the assertion one way or the other and can not find any support either way.

I may be wrong on this but **I can not imagine not taking a warm shower after a cold dive**. If heated water were bad - we most likely would have seen a marked increase in DCS in cold water deep divers who use heated water in their suits. I suspect that the truth lies somewhere in the middle - as is usually the case.

If any of you know of any studies that back up the assertion that hot tubs or hot showers increase the risks of a decompression accident - please let me know. "Consensus" reports are good for guidelines - but still are **subjective educated conjecture** if not backed up by good RCTs. .

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"Well, Dr. **Jolie Bookspan** has done it again! An expert at debunking 'scientific' bunk, she has written an extremely interesting 'do-it-yourself' exercise guide for the remedy of low back pain. Based on natural use of the abdominal muscles, it provides a concept that can be used in every day life for the thousands (millions?) who have chronic lumbosacral pain due to poor posture and weak abdominal muscles. Freeing the 'crunchers' from the boredom of useless exercise programs that are quickly abandoned, the 'abs low back remedy' of Dr. Bookspan will find support from those of us who realize the importance of the natural use of the abs in maintaining good back posture and function. The program is simple, sensible and highly effective. The book is highly recommended to read and keep as a reference source.." Not yet published.

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Here is a letter from **Dr.Nick Mclver** about our discussion of epilepsy in the last newsletter:

I entirely agree with your reservations, and your later added comments. One wonders why he is still taking Tegretol, and also what his neurological state is and is there a recent EEG. Under the current guidelines of BS-AC (and I have just checked the latest draft of the very comprehensive Swiss Sport Diving Guidelines and they also agree - no diving while on treatment and in (Swiss) addition a recent EEG needed if off treatment).

If he wishes to be an instructor he then comes under the Diving at Work Regs UK and then the time interval is ten years free of seizure, off treatment and full expert Neurological assessment.

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Another letter about epilepsy and diving from **Don Lambrecht**:

I agree with you about NO diving with epilepsy. While this person may be able to work around his disabilities with help from his friends, he forgets that the diving world is generally made up of "buddies" that rely on each other in a bind. Would he be able to help me if I needed it? I sure wouldn't want to have that question hanging over me if I was diving with him.

\*\*\*\*\*

About Diving with Epilepsy from **Omar Sanchez, MD**

Interesting chest X-Ray of a diver who had a generalized tonic-clonic seizure, in <http://www.chestjournal.org>

I wrote to the author asking about the cause of the seizure ( epilepsy, O2 tox , Nitrox , re-breather, etc) but I haven't answer.

\*\*\*\*\*

Seizure in a Scuba Diver (with **chest x-ray**)

<http://www.chestjournal.org/cgi/content/full/119/1/285#F1>

\*\*\*\*\*

Along these same lines, there is a discussion of consensus attempts about fitness for asthmatics to dive in the new **Edmonds book, 'Diving and Subaquatic medicine', 4th Edition, p. 571**. A similar discussion of the pros and cons of IDDM diving is in the same book as chapter 57, p. 581. This book is well worth your purchase, no matter what your exchange rate and can be bought over the Internet at our web page at

<http://www.gulftel.com/~scubadoc/DMbkstr.htm> or at

<http://www.amazon.com/exec/obidos/ASIN/0340806303/divingmedicine/103-9590907-3087800>

Let us hear from you about debated, unproven assertions that are made about diving medicine. Sometimes the verbiage gets stronger than the truth.

Best regards for safe diving!

Ern Campbell, MD

What Is Life? "I am not going to answer that question!", J.B.S. Haldane  
J.B.S. Haldane, What Is Life?. New York: Boni and Gaer, 1947. p 53.

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## **Pearl of the Day!**

### **Inherent unsaturation**

Two Australian workers, Hugh Le Messurier and Brian Hills, noted that deeper stops were effective in the reduction of DCS. This observation was noted with the study of Okinawans who developed their own decompression schedule after trial and error and thousands of lives lost in Western Australia. This schedule required about 2/3 the time of the US Navy schedule and later prompted Hills to develop his "thermodynamic" model of DCS, introducing a most important concept of 'unsaturation' in bubble prevention and resolution. There is a nice discussion of this in Edmonds, 'Diving and Subaquatic Medicine', p. 115. Total gas tension in tissues and venous blood is less than barometric pressure by about 60 mmHg, the importance of this tissue unsaturation in diving is that ascent causes an instant reduction of total pressure, leaving the alveolar nitrogen partial pressure less than the tissue with a gradient being established and elimination of nitrogen with the reestablishment of tissue unsaturation.

For another discussion, there is a section in Bruce Wienke's book, 'Technical Diving in Depth', p. 265-266. Inert gas transfer and associated bubble growth are subtly influenced by metabolic O<sub>2</sub> consumption. Tissues and blood are typically undersaturated in respect to ambient pressure. CO<sub>2</sub> produced in metabolic processes is 35 times more soluble than the O<sub>2</sub> consumed and exerts a smaller partial pressure than the oxygen replaced (Henry's law). The unsaturation aids the uptake of O<sub>2</sub> and off-gassing of N<sub>2</sub>.

This book can be bought at our Bookstore at <http://www.gulftel.com/~scubadoc/DMbkstr.htm> or at <http://www.amazon.com/exec/obidos/ASIN/0941332977/divingmedicine/>

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## **Question of the Week by Martin Quigley, MD**

### **QUESTION: Plavix or 'clot-buster drugs of benefit to divers?**

I was wondering if taking an anti-clotting drug (such as.. I forget the name of the drug..plavix..??) immediately after an incident that you know will/should cause you to be bent, such as a VERY rapid ascent, or missing a few deco-stops due to an emergency, being in remote location and the like, might reduce the amount of clotting formed around gas that come out of solution and forms bubbles.

What about clot-buster drugs that are used in the ER on heart attack victims? Might these clot buster drugs help to increase the diameter of particularly plaqued vessels.

And finally, what about taking some kind of vaso-dilator in the same emergency situations or even combinations of the above types of medicines? What complications might be associated with the use of these medications in divers after they are out of the water and not subject to high PO<sub>2</sub> or possibly high PHe?

Thank you in advance for your time and your insight.

ANSWER:

Dear Diver,

First of all, a VERY rapid ascent can kill you from an arterial gas embolism, even with a staffed recompression chamber at the dive site. If you do nothing else, make SLOW ascents, particularly the last 20 feet (and after a decompression dive even an ascent rate of 1 foot per minute for the last 20 feet isn't excessively slow).

Obviously you can't prevent all emergencies, but "an ounce of prevention is worth a pound of cure". If you're "pushing the envelope" (deep, mixed gas, decompression diving for instance), you want to be very careful that you religiously follow your planned decompression profile. If you're diving in remote areas, you may want to make your diving more conservative and stay well away from your no decompression "limit".

There are certainly theoretical benefits to the Plavix-types of drugs you mention, but there is no scientific data to support their efficacy. If these drugs were to be of benefit, they would have to be given BEFORE there was intravascular bubble formation - after all, it's the intravascular bubbles that initiate the sequence of intravascular coagulation (clotting) that lies at the heart of the damage done by "decompression sickness" (DCS). Once the intravascular bubbles form and initiate the cascade of coagulation, giving preventative drugs would not be effective (ie after an incident).

In addition, these drugs are not without very significant side effects, sufficient to preclude their use as "routine" prophylaxis (prevention).

We know that immediate oxygen breathing and recompression therapy started as soon as possible work. The "ER clot-busting" drugs MIGHT have a role, but only as an adjunct to recompression. As most of the DCS damage is thought to be in microscopic vessels, and these drugs are generally used to dissolve clots in large vessels, I'm not sure they would work - certainly worth a scientific study, but not to try outside a rigorously designed study protocol (and again, only as an adjunct to recompression).

Having said all that, I know that many "extreme" technical divers do routinely take aspirin and/or ibuprofen before a deep, decompression, mixed gas dive. The side effects and risks of this type of treatment are low, and they may offer benefits. (I've been known to take an aspirin before one of these dives.) Beyond that, I wouldn't recommend any other drug therapy.

I hope the above has answered your questions.

Martin M. Quigley, MD

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## Links

A Comparison of the Validity of Different Diagnostic Tests in Adults With Asthma\*

<http://www.chestjournal.org/cgi/content/abstract/121/4/1051>

Massive coral bleaching strikes Great Barrier Reef

<http://www.newscientist.com/news/news.jsp?id=ns99992164>

Emergency Medicine's Home Page

<http://www.emedhome.com/>

Emergency Indications for Hyperbaric Oxygen

<http://www.emedhome.com/archives-data.cfm?ID=news103000&Type=news>

A year's experience of Irukandji envenomation in far north Queensland

<http://www.mja.com.au/public/issues/xmas98/little/little.html>

Underwater application of nasal decongestants: method for special operations.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=11143432&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11143432&dopt=Abstract)

SES Current Expeditions

<http://www.ses-explore.org/>

Hyperbaric Medical Societies Forum (German)

<http://www.gtuem.org/cgi-bin/forum/YaBB.pl>

OSHA, on Commercial Diving

<http://www.osha-slc.gov/SLTC/commercialdiving/index.html>

DCIEM Decompression Theory

[http://watch.citizen.co.jp/cyber/qa/eng/ans/dciem\\_e.htm](http://watch.citizen.co.jp/cyber/qa/eng/ans/dciem_e.htm)

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## Mailbox

Here is a notice from one of our consultants, Capt. Frank Butler:

You'll notice that there is a different format for the SOCOM Biomedical R+D Update this time. Since the NSW/USSOCOM Biomedical Research Program went past the 10-year mark in 2001, I thought it would be worthwhile to provide an overview of the accomplishments of the program in its first decade of operation. Let me know if you have suggestions for additional projects that we should be working on.

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Naval Special Warfare/U.S. Special Operations Command  
Biomedical Research and Development  
The Ten -Year Update  
February 2002

The year 2001 marked the ten-year point for the Naval Special Warfare/U.S. Special Operations Command Biomedical Research Program. This is a good time to review the accomplishments of the program during that interval. It is also an appropriate time to say "thank-you" to the many individuals and institutions who have helped with these projects over the years. Some of the items listed below (in approximate chronological order) have been funded research efforts - others have accomplished as in-house initiatives. These projects encompass a wide range of topics but have in common the goal of either enhancing Special Operations Forces (SOF) mission capabilities or helping to protect the health of SOF operators.

Naval Special Warfare (NSW) Exercise-Related Injury Rehabilitation Clinics

NSW Sports Medicine/Orthopedic Surgery Consultation Clinics

Enhanced Combat Swimmer Multi-Level Dive Procedures

Revised Dry Deck Shelter (DDS) Medical Emergency Procedures

The NSW Ten Commandments of Nutrition

Vibration/Shock Injury in NSW High Speed Boat Operations

Tactical Combat Casualty Care in Special Operations

Refractive Surgery in the Military

Special Operations Computer-Assisted Medical Reference System (SOCAMRS)

Naval Special Warfare Dive Planner for DDS/SDV Operations

NSW and Navy Diving Contact Lens Program

Dry Deck Shelter Emergency Oxygen Decompression Procedures

Special Operations Medical Translator

Biomedical Factors in the Advanced SEAL Delivery System (ASDS)

Special Operations Mission-Related Performance Measures

Navy SEAL Nutrition Guide



35,000 Foot Altitude Decompression Sickness Exposure Limits

Extended MK 16 UBA Operating Limits for SEAL Delivery Vehicle (SDV) Operations

Sofnolime as a Replacement for Sodasorb in Closed-Circuit UBA Canisters

COMNAVSPECWARCOM Biomedical Research Instruction

Thermal Protection and Mission Performance in SOF Combat Swimmers

Caffeine Supplementation to Maintain Performance in Sustained Operations

Diving and Hyperbaric Ophthalmology (in "Survey of Ophthalmology")

Revised Visual Standards for Naval Special Warfare

Hypercarbia Recognition Training for Special Operations Combat Swimmers

Medical Support of Special Operations (in U.S. Army "Textbook of Military Medicine."

<http://www.armymedicine.army.mil/history/borden/medaspofharshenvrnmnts/index.htm>)

Special Operations Interactive Medical Training Program

Laser Eye Injuries in Special Operations - Threat and Prevention

Extended MK 25 UBA Operating Limits for SDV Operations

Suicide Prevention in Special Operations

U.S. Navy Diving Techniques and Equipment (in Bove and Davis "Diving Medicine")

Nutritional Supplements in Special Operations

(<http://www.usuhs.mil/mim/ergopam.pdf>)

Tactical Combat Casualty Care (in ACS "Prehospital Trauma Life Support Manual")

Screening Test for Night Vision

Special Operations Medic Combat Casualty Equipment Review

U.S. Army/American Red Cross Hemostatic Dressing

Health Risk Assessment in Special Operations

Navy SEAL Physical Fitness Guide

Submarine Deployments and Special Operations Mission-Related Performance

Respiratory Muscle Training to Improve Aerobic Endurance

The Eye at Altitude (in "International Ophthalmology Clinics")

Ocular Emergencies in Austere Environments (in Auerbach's "Wilderness Medicine")

Tactical Combat Casualty Care Workshops

Diving Casualties in Special Operations

Wilderness Casualties in Special Operations

Chemical Warfare Casualties in Special Operations

Biological Warfare Casualties in Special Operations

Radiation Casualties in Special Operations

Urban Warfare Casualties in Special Operations

Elimination of Oxygen Tolerance Test for Screening Special Operations Diving Candidates

Guidelines for High Altitude Parachute Operations after Diving

Azithromycin Prophylaxis for Respiratory Infections in BUD/S Training

Hyperoxic Myopia in SCUBA Divers using a 1.3 ATA PPO2 Gas Mix

Resistive Heating Suit for Thermal Protection in SDV Operations

Cochran NAVY Decompression Computer

Warm Water Diving Guidelines for SOF Combat Swimmers

ASDS Medical Advisory Panel

Tactical Medicine Training for SOF Mission Commanders

The NSW Tactical Medicine CD

BUMED/SOCOM Operational Medicine CD

Special Operations Medical Handbook

VVAL18 Dive Planner for SDV/DDS Operations

Nutrition, Hydration, and Supplements in BUD/S Training

SOF Combatant Craft Ergonomics Digital Library

ASDS Medical Emergency Procedures

ASDS Deep Water MK 25 Lockout Procedures

SOF/BUMED Committee on Tactical Combat Casualty Care

Proposed New NSW Breath-Hold Diving Guidelines

Initial Evaluation of the Prism UBA

Prevention of Altitude Decompression Sickness in CV-22 Operations

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## Environmental Legislation

Hi friends and colleagues -

I'm sending the URL for the Ocean Conservancy network on a key piece of environmental legislation that affects us all, divers and non-divers. It's been written about in the Wall Street Journal this week too. Check this out, whether or not you choose to send a letter to the EPA. And if you think it's important, send it on to your list of contacts, so we can generate a LOT of letters!

XOXO

Christina  
Los Angeles  
[tinasahl@earthlink.net](mailto:tinasahl@earthlink.net)

The Bush Administration is attempting to gut a key Clean Water Act program. As ridiculous as it sounds, the Administration wants to reverse the requirement that polluted waters be cleaned up. Please respond to this alert immediately and let the Environmental Protection Agency (EPA) Administrator know she must maintain a strong Clean Water Act and not weaken it

You can take action on this alert either via email (please see directions below) or via the web at:

<http://actionnetwork.org/campaign/dirtywaterprop/i83wk82h78xedx>

We encourage you to take action by May 17, 2002

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## KMI's 8th Annual Fiberoptic Submarine Systems Symposium

June 13-14, 2002  
Coronado Island Marriott  
San Diego, California

SYMPOSIUM TOPICS INCLUDE:

- New Business Models
- Political Complexities at Landing Points
- Submarine Technology Evolution: What's Next
- Leveraging Existing Assets
- Submarine System Maintenance: Post Telecom Crash
- Festoon Technology vs. Terrestrial Backbone
- Terrestrial and Submarine Integrated Systems
- Consortium vs. Private Investment Pendulum
- Market Forecasts
- Fiber Deployment
- Regional Panel Updates: The Americas, Asia/Pacific, Europe & Africa

**KEYNOTE ADDRESS: A New Economic and Political Model for the Submarine Cable Industry**

Dr. John Kasdan

Senior Research Fellow of CITI

Columbia University, USA

**EXECUTIVE-LEVEL SPEAKERS INCLUDE:** Alcatel Submarine Networks, Australia/Japan Cable, Cable & Wireless, Global Photon, KMI Research, Lynx Technologies, NEC Corporation, New World Networks, Pirelli Submarine Telecom Systems, T. Soja & Associates, TYCO Telecommunications, and many more

**ADVANCE REGISTRATION DISCOUNT:** Register by May 17th to receive the advance registration discount of \$395. **YOU PAY ONLY \$1,750\***

\*Registrations received after May 17th are \$2,145

**REGISTER NOW!**

For More Information Log On To:

<[http://www.kmicorp.com/fiberoptics\\_conferences/undersea.htm](http://www.kmicorp.com/fiberoptics_conferences/undersea.htm)>

OR

Contact Dorcie Sarantos

Phone: 1.401.243.8114

(US: 800.343.4035)

Fax: 1.401.351.0564

Email: <mailto:dorcie@kmicorp.com>

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**There has been a change in the URL for the 2002 Safety Survey of Recreational Scuba Divers.**

The new URL is:

<http://www.zoomerang.com/survey.zgi?HEQLKHPE3S7LPK8HHLKDVS6N>

Please help distribute it.

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This from DAN

## DAN Research Announces Top Projects for Summer of 2002

As summer approaches, the DAN Research Department is focused on the following current studies on dive health and safety:

### Project Dive Exploration

An observational research study, Project Dive Exploration (PDE) is designed to collect dive profile data on actual dives -- no chamber dives in this study. In addition, PDE helps compile information on behavioral and health aspects of recreational divers. This study will provide a look into the world of recreational divers: their behavior, dive profiles and any specific characteristics of these divers and their risks of decompression illness (DCI).

The study's aim to establish a recreational diving database of safe dives as well as dives that result in injuries. This collection of data would then serve as a resource for research in dive safety. Since data collection began in 1995, PDE has generated more than 40,000 dive profiles for the database through April 2002.

To enhance data-gathering efforts, DAN initiated a program to recognize manufacturers who make dive computers that are compatible with PDE (see Dive Computer Recognition Program). Volunteer Field Research Coordinators and Data Collection Centers are also integral to PDE data collection. The first liveaboard to join PDE was Nekton Diving Cruises. Since 1998, the Nekton Pilot and primarily Field Research Coordinator Mike Cohen have collected data, and in 2001 the Nekton Rorqual, a second liveaboard, began doing the same under the supervision of John Frederic. DAN began working with the Aggressor Fleet of liveaboards in 2001 to collect PDE dives, and as of April, the Turks and Caicos and Cayman Aggressors' crew members were trained in PDE data collection.

### Aging Diver Study

Now conducted as part of PDE, the Aging Diver Study seeks to determine the effects of age on diving. It seeks to identify special concerns for divers who are age 50 or older, with a focus on the occurrence of equipment problems, dive medical problems, non-dive medical problems and other diving-related incidents. DAN is testing the hypothesis that older divers are at no greater risk for dive injuries than younger divers. The study will evaluate the effects of age and associated medical conditions on dive style and dive outcome.

### Dive Computer Recognition Program

In 2000, DAN began a program to recognize manufacturers who make dive computers that were compatible with PDE. The program is open to all manufacturers that have implemented the DAN Dive Log-7 (DL7)

standard in their dive log software. The DL7 standard was developed to support PDE but is applicable in any other project that involves dive data collection. The purpose of the Dive Computer Recognition Program is to increase participation in PDE by increasing awareness of all dive computer users. To date, Cochran, DiveRite, Suunto, Uwaterc and Sensus are distributing their products worldwide with an announcement that their dive computers are compatible with PDE.

#### Ascent Rate Study

DAN's Ascent Rate Study seeks to evaluate the relationship of ascent rate to decompression illness and venous gas emboli (i.e., Doppler-detected bubbles in the bloodstream). The study will determine if differences exist in the incidences of decompression sickness and venous gas embolism between 10- and 60-foot (3- and 18-meters) per-minute ascents after dives to 100 feet / 30 meters. Study dives are conducted at the Center for Hyperbaric Medicine and Environmental Physiology (Hyperbaric Center) of Duke University Medical Center. DAN personnel will help to administer and conduct this study.

#### U.S. Navy Flying After Diving (FAD) Study

U.S. Navy divers undertake training and missions that may require flying soon after diving. To reduce the risk of decompression sickness as a result of flying after diving, guidelines published in the U.S. Navy Diving Manual in 1999 specified how long a diver should remain at sea level pressure before further decompression to altitude for a flight. This study, funded by the Navy, aims to test current USN FAD procedures, and test oxygen breathing during the surface intervals before flying. Trials began in March at Duke University's Hyperbaric Center.

#### DAN Internship Program

The DAN Research Internship Program began in 2000 with the objectives of expanding PDE data collection and providing experiences for people in careers in diving or diving-related fields. Recruited largely from undergraduates at colleges, universities and medical schools, the interns become DAN liaisons to the diving public, communicating the importance of research for improving the safety of recreational diving.

DAN trains and mentors the interns in data collection and diving medical research. From May through August, interns receive training in diving physiology and research methodology, with access at DAN to people who are conducting diving safety research. In addition, they are trained as PDE Field Research Coordinators to collect dive data. They then locate to PDE host sites for two months to collect PDE data. Interns often earn college credits for their work. Internship applications are due by January.

So far, DAN has trained nine interns, who have been placed on the East and West Coasts and in the Caribbean and collected more than 3,300 dives. Also, DAN trained three dive instructors in Cozumel, Mexico, in 2000 to collect PDE data year-round from other dive instructors and divemasters, who are particularly interesting because they dive often, have aggressive dive profiles, and may have a relatively high DCI incidence. Since December 2000, those three interns have collected 5,500 dive profiles, which included four DCI incidents.

For more information about all DAN Research studies or to inquire about participating, call 1-800-446-2671 ext. 260 or email DAN Research at [Research@dan.duke.edu](mailto:Research@dan.duke.edu).

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## Services Available on Our Web Site

## DOWNLOAD OF THE WEEK (PDF)

Long-term Effects of Diving



Requires  Free Download

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## Changes

Web page with all changes in the web site in past two weeks.

<http://search.freefind.com/find.html?id=9763814&w=0&p=0>

Additions, changes or corrections have been made in the following web pages on Diving Medicine Online in the past two weeks.

Apr 24, 2002 - Diving Medicine

<http://www.gulftel.com/~scubadoc/>

Apr 24, 2002 - Pulmonary Problems

<http://www.gulftel.com/~scubadoc/pulprbs.html>

Apr 24, 2002 - Women and Diving Medical Problems

<http://www.gulftel.com/~scubadoc/womdiv.html>

Apr 24, 2002 - Recent Diving Medical Abstracts

<http://www.gulftel.com/~scubadoc/absuhms.htm>

Apr 24, 2002 - Breath-hold Diving:Taravana

<http://www.gulftel.com/~scubadoc/taravana.html>

Apr 22, 2002 - Thailand Dive Doctors

<http://www.gulftel.com/~scubadoc/divthai.htm>

Apr 17, 2002 - Austrian Dive Doctors

<http://www.gulftel.com/~scubadoc/divaus.htm>

Apr 17, 2002 - Long-term Effects of Sport Diving

<http://www.gulftel.com/~scubadoc/LTE.htm>

Apr 17, 2002 - Age and Diving

<http://www.gulftel.com/~scubadoc/agediv.html>

Apr 16, 2002 - New Mexico Dive Doctors

<http://www.gulftel.com/~scubadoc/divNM.htm>

Apr 15, 2002 - Links to Diving Medicine

<http://www.gulftel.com/~scubadoc/lnks.html>

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## Humor

### FRIDAY IN HELL

One day a guy died and found himself in hell. As he was wallowing in despair, he had his first meeting with a demon.

The demon asked, "Why so glum?"

The guy responded, "What do you think? I'm in hell!"

"Hell's not so bad," the demon said. "We actually have a lot of fun down here. You a drinking man?"

"Sure," the man said, "I love to drink."

"Well, you're gonna love Mondays then. On Mondays all we do is drink. Whiskey, tequila, Guinness, wine coolers, diet Tab and Fresca. We drink till we throw up and then we drink some more!"

The guy is astounded. "Damn, that sounds great."

"You a smoker?" the demon asked.

"You better believe it!"

"You're gonna love Tuesdays. We get the finest cigars from all over the world and smoke our lungs out. If you get cancer, no biggie. You're already dead, remember?"

"Wow," the guy said, "that's awesome!"

The demon continued. "I bet you like to gamble."

"Why yes, as a matter of fact I do."

"Wednesdays you can gamble all you want. Craps, blackjack, roulette, poker, slots, whatever. If you go bankrupt, well, you're dead anyhow."

"You into drugs?"

The guy said, "Are you kidding? I love drugs! You don't mean . . ."

"That's right! Thursday is drug day. Help yourself to a great big bowl of crack, or smack. Smoke a doobie the size of a submarine. You can do all the drugs you want, you're dead, who cares!"

"Wow," the guy said, starting to feel better about his situation, "I never realized Hell was such a cool place!"

The demon said, "You gay?"

"No."

"Ooooh, you're gonna hate Fridays!"

\*\*\*\*\*

## Bubba's Friends



Bubba died in a fire and his body was burned pretty badly. The morgue needed someone to identify the body, so his two best friends, Daryl and Gomer, were sent for.

Daryl went in and the coroner pulled back the sheet. Daryl said, "Yup, he's burnt pretty bad. Roll him over." The coroner rolled him over, and Daryl said, "Nope, ain't Bubba."

The coroner thought that was rather strange, so he then brought Gomer in to identify the body. Gomer took a look at him and said, "Yup, he's burnt real bad, roll him over."

The coroner rolled him over and Gomer said, "No, it ain't Bubba."

The coroner asked, "How can you tell?"

Gomer said, "Well, Bubba had two assholes."

"What do you mean, he had two assholes?!" said the coroner.

"Yup, everyone in town knew he had two assholes. Every time we three went to town, folks would say, 'Here comes Bubba with them two assholes.'"

\*\*\*\*\*

What is the most functional word in the English language?

Well, it's shit.....That's right, shit!

Shit may just be the most functional word in the English language.

Consider this:

You can be shit faced,  
Shit out of luck,  
Or have shit for brains.

With a little effort, you can get your shit together,  
Find a place for your shit,  
Or decide to shit or get off the pot.

You can smoke shit,  
Buy shit, sell shit,  
Lose shit, find shit,  
Forget shit,  
And tell others to eat shit and die.

Some people know their shit,  
While others can't tell the difference between shit and shineola.

There are lucky shits,  
Dumb shits,  
Crazy shits,  
And sweet shits.

There is bull shit,

Horse shit,  
And chicken shit.

You can throw shit,  
Sling shit,  
Catch shit,  
Shoot the shit,  
Or duck when shit hits the fan.

You can give a shit,  
Or serve shit on a shingle.  
You can find yourself in deep shit,  
Or be happier than a pig in shit.

Some days are colder than shit,  
Some days are hotter than shit,  
And some days are just plain shitty.

Some music sounds like shit,  
Things can look like shit,  
And there are times when you feel like shit.

You can have too much shit,  
Not enough shit,  
The right shit,  
The wrong shit,  
Or a lot of weird shit.

You can carry shit,  
Have a mountain of shit,  
Or find yourself up shit creek without a paddle.

Sometimes everything you touch turns to shit,  
And other times you fall in a bucket of shit and come out smelling like a rose.

When you stop to consider all the facts,  
It's the basic building block of creation.

And remember, once you know your shit,  
You don't need to know anything else!

You could pass this along, if you give a shit.

\*\*\*\*\*

A frog goes into a bank and approaches the teller. He can see from her nameplate that her name is Patricia Whack, so he says: "Miss Whack, I'd like to get a \$30,000 loan to take a holiday."

Pattie looks at the frog in disbelief and asks his name. The Frog says his name is Kermit Jagger, his dad is

Mick Jagger, and that it's okay, he knows the bank manager.

Pattie explains that he will need to secure the loan with some collateral. The frog says, "Sure. I have this", and produces a tiny porcelain elephant, about half an inch tall- bright pink and perfectly formed.

Very confused, Pattie explains that she'll have to consult with the bank manager and disappears into a back office. She finds the manager and says, "There's a frog called Kermit Jagger out there who claims to know you and wants to borrow \$30,000 and he wants to use this as collateral". She holds up the tiny pink elephant. "I mean, what in the world is this?"

(you're gonna love this)

(its a real treat)

(masterpiece)

(wait for it)

The bank manager looks back at her and says...

"It's a knickknack, Pattie Whack, give the frog a loan. His old man's a rolling stone. "

\*\*\*\*\*

## A Bad Case

An American tourist goes on a trip to China. While in China, he is very sexually promiscuous and does not want to use a condom. A week after arriving back home in the States, he awakes one morning to find his penis covered with bright green and purple spots. Horrified, he immediately goes to see his doctor. The doctor has never seen anything like this before, orders him has some tests and tells him to return in two days for the results.

The man returns a couple of days later and the doctor says, "I've got bad news for you. You've contracted Mongolian VD. It's very rare and almost unheard of here. We know very little about it."

The man looks a little perplexed and says, "Well, give me a shot or something and fix me up, doc." The doctor answers, "I'm sorry, there's no known cure. We're going to have to amputate your penis."

The man screams in horror, "Absolutely not! I want a second opinion!"

The doctor replies, "Well it's your choice. Go ahead if you want, but surgery is your only choice."

The next day, the man seeks out a Chinese doctor, figuring that he'll know more about the disease. The Chinese doctor examines his penis and proclaims,

"Ah yes, Mongolian VD. Very rare disease."

The guy says to the doctor, "Yeah, yeah, I already know that, but what can you do? My American doctor wants to operate and amputate my penis!"

The Chinese doctor shakes his head and laughs, "Stupid American doctor! American doctor, always want to operate. Make more money that way. No need to operate!"

"Oh thank God!" the man replies.

"Yes!" says the Chinese doctor, "You no worry! Wait two weeks.  
Penis fall off by itself!"

\*\*\*\*\*

## Subject: PREGNANCY Q & A

Q: Should I have a baby after 35? A: No, 35 children is enough.

Q: I'm two months pregnant now. When will my baby move? A: With any luck, right after he finishes college.

Q: What is the most reliable method to determine a baby's sex? A: Childbirth.

Q: My wife is five months pregnant and so moody that sometimes she's borderline irrational. A: So what's your question?

Q: My childbirth instructor says it's not pain I'll feel during labor, but pressure. Is she right? A: Yes, in the same way that a tornado might be called an air current.

Q: When is the best time to get an epidural? A: Right after you find out you're pregnant.

Q: Is there any reason I have to be in the delivery room while my wife is in labor? A: Not unless the word "alimony" means anything to you.

Q: Is there anything I should avoid while recovering from childbirth? A: Yes! Pregnancy.

Q: Do I have to have a baby shower? A: Not if you change the baby's diaper very quickly.

Q: Our baby was born last week. When will my wife begin to feel and act normal again? A: When the kids are in college.

\*\*\*\*\*

## This will warm your pea-picking heart:

The following letter arrived at a Middle School in Hudson, Florida after the school had sponsored a luncheon for the elderly. This story is a credit to all human kind.

Dear Hudson Middle School,

Bless you for the beautiful radio I won at your recent senior citizen's luncheon.

I am 84 years old and live at the Hudson Assisted Home for the Aged. All of my family has passed away. I am all alone now and it's nice to know that someone is thinking of me. Bless you for your kindness to an old forgotten lady.

My roommate is 95 and always had her own radio, but before I received one, she would never let me listen to hers, even when she was napping. The other day her radio fell off the nightstand and broke into a lot of pieces.

It was awful and she was in tears. She asked if she could listen to mine, and I said fuck you.

\*\*\*\*\*

## Important Link

[Elvis Presley's Graceland](#), the official home page, and the [unofficial Elvis home page](#)

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web page at <http://www.gulftel.com/~scubadoc/sbscrb.html> . In addition to the Paypal and US Mail method of subscribing (personal checks and Postal Money Orders), we now have developed a secure relationship with Amazon Honor System.

Let me know if you have any announcements, tips, links, articles or responses to any of the material in our newsletter.

Best regards for safe diving!

Ernie Campbell  
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