



# Diving Medicine Ten Foot Stop Newsletter

July 15, 2004

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## **-Note from scubadoc-**

### Not all bubbles are bad!

There is an interesting article in the Undersea and Hyperbaric Medical Journal, Vol. 31, No.1, 2004 about intravascular microbubbles as an ultra-effective means of transporting oxygen and other gases. Lundgren, Bergoe and Tyssebotn describe studies of volume stabilized microbubbles in an emulsion of dodecafluoropentane [DDFP] that have been shown to effectively support gas exchange between lungs and tissues. A small amount [1 cc ] of 2% emulsified DDFP can provide for the O<sub>2</sub> consumption of a resting O<sub>2</sub> breathing adult person. When injected, the emulsion evolves into bubbles composed of DDFP gas that rapidly equilibrates with O<sub>2</sub> and CO<sub>2</sub> tensions in surrounding tissues., carrying O<sub>2</sub> from the lungs and CO<sub>2</sub> from the surrounding tissues. Animal studies have shown the facility of this method in treating hemorrhagic shock; another study showed the emulsion greatly enhancing the elimination of tissue nitrogen in O<sub>2</sub> breathing pigs. The implications for the prevention and treatment of DCS are obvious.

### [References](#)

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Most of you know my feelings that children should not dive. Here are a couple of web page links that you might find interesting from the obverse view point:

**Scuba Rangers: A Way Cool Kids Club**

<http://www.scubarangers.com/index2.html>

**Rodale's Diving Scuba Clubs for Children**

[http://dive.scubadiving.com/html/200110childcert\\_chart.html](http://dive.scubadiving.com/html/200110childcert_chart.html)

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**Dr. Michael D. Curley Is Named President of Divers Alert Network**

<http://snipurl.com/7r2v>

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What do you think?

scubadoc

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## **-Question of the Week-**

ADD and Diving in a 10 year old girl.

**Question:**

I have been asked if I would examine a young girl of ten with attention seeking deficiency who wants to undergo a Paddy recreational diving course. I understand she is on Ritalin tablets and being followed up by a clinic and since she is feeling well, the clinic may get her off the Ritalin. I am writing to the clinic for more information; once I get the formal consent form from her father. I would be grateful to know of your thoughts on this subject, and also what are the factors I look for or ask for, before I could decide on her fitness to dive.

Thank you for the help.

Answer from one of our UK consultants:

I do have some concerns about the 10 year old girl doing open sea diving as there is by no means universal agreement that youngsters are at NOT at some increased risk of accident or health hazzard:

- Maturity - and ability to act as a true "buddy" in an emergency
- Do they therefore always dive with an experienced diver or parent
- Concerns over growing ends of long bones and circulating nitrogen bubbles
- The increased risk of delayed closure of PFO

I am not sure that any of these concerns have been substantiated

Then: Attention Deficit Disorder and Ritalin:

- More concern about behaviour and learning in a most unfamiliar but unforgiving environment
- Ideally would not be diving whilst taking Ritalin
- Need for a period of observation and assessment if off Ritalin

I will try to attach 4 slides from a PowerPoint presentation by Dr Ernest Campbell MD,

Diver and Diving Webmaster in the USA of whom we have spoken in the past. Also some views on young female diving candidates from a lecture by Dr Maida Taylor, Gynaecologist and experienced diver also in USA.

I would not be encouraging any rapid conclusion other than need for much consideration and caution before endorsing any action. I am not a Sports Diving Referee but I would personally advise caution here. If there is a family diving holiday in the offing what about learning snorkelling in the meantime?

Another answer:

**One of our consultants, Martin Quigley, MD, is a diving physician and a PADI instructor. He has given the following advice re ADD, Ritalin and diving:**

**"As a PADI instructor, a couple of years ago I disqualified for training a young girl with ADD on Ritalin. There were/two main reasons for that decision.**

**First, is the underlying disease process, - Can you attest that a relatively young child with ADD is fully able to: 1) conform to all the necessarily boring details (such as dive tables) to safely plan and conduct dives; 2) function as a "buddy" - doing nothing to put her buddy at risk (like wandering off underwater) and being willing and able to assist her buddy in an emergency; and 3) not place the other divers on the boat in jeopardy by inordinately increasing the chances that a rescue would be required? Even if you or the attending psychiatrist could so attest, it's the instructor's ultimate decision and responsibility - and even though most experienced instructors are adept at recognizing psychological problems, it is unreasonable to expect an instructor to make this determination based on minimal interaction with a youngster with a recognized psychological disorder.**

**The second reason is the psychoactive drug therapy. None of these drugs have been studied under pressure - and the potentially additive effects of narcosis and drugs could further exacerbate the concerns I've expressed above.**

**PADI conforms to the recommendations of the Recreational Scuba Training Council regarding fitness to dive. The following is included in their absolute contraindications for initiation of recreational scuba diving training "while receiving psychotropic medications". A PADI instructor who violated this statement would be in violation of standards and would place his liability insurance coverage at risk.**

**I don't mean to imply that your patient could not have been trained safely and become an accomplished and safe diver. I am just saying that the risks to the diver, her buddy, other divers and her instructor were not warranted for a RECREATIONAL activity.**

**Training agency standards require medical clearance (the relevant portions of the PADI questionnaire are inserted below) and also restrict the maximum depth of dives to 40 feet.**

**" Please answer the following questions on your past and present medical history with a YES or NO. If you are not sure, answer YES. If any of these items apply to you, we must request that you consult with a physician prior to participating in scuba diving. Your instructor will supply you with a PADI Medical Statement and Guidelines for Recreational Scuba Diver's Physical Examination to take to a physician.**

**\_\_\_\_\_ Are you currently taking medications that carry a warning about any impairment of your physical or mental abilities?**

**\_\_\_\_\_ Do you have a behavioral health problem or a nervous system disorder?**

**In my particular example, the girl's mother found an instructor from a different agency who accepted her as a student.**

**Was that the right approach?**

**I've appended a couple of statements regarding Ritalin and ADD and their sources.**

**I hope I've helped explain the situation. If I can provide any additional information, please let me know.**

**Martin M. Quigley, MD, FACOG**

**Here's an excerpt from DAN recommendations:**

**<http://www.diversalertnetwork.org/medical/faq/faq.asp?faqid=77>**

### **Fitness & Diving**

**At its worst, ADD can be so pronounced as to prevent a prospective student from learning the simple skills necessary for safety. This could present a significant hazard in many areas, including both driving and scuba diving. ADD is usually not that intense, however. Fitness to dive can best be assessed by looking at social, school, athletic and job performance. Note that because some ADD patients take medications, they should consider the potential impact of medications while diving.**

**A case by case dive candidate review is necessary to determine if an individual has the necessary physical or mental abilities to handle the stresses of underwater activity. Additionally, scuba diving is a buddy activity that assumes a diver can perform buddy and self rescue in an emergency situation.**

### **Medication Used in Treatment**

**No testing has ever been done to determine interactions between high partial pressures of nitrogen and the medications used to treat attention deficit disorder.**

**Two drugs currently in use are Ritalin(r) (methylphenidate) and Dexedrine(r) (dextroamphetamine). Both are heavy-duty stimulants that leave most adults "wired."**

**However, they often have a calming and somewhat paradoxical effect on children with attention deficient disorder. This desirable effect is less apparent as children grow older.**

**For more information on conditions involving the central nervous system, see all of Dr. Hugh Greer's article from the May/June 1999 issue of Alert Diver. (located at: <http://snipurl.com/7hdn>)**

**Here's an excerpt from: <http://scuba-doc.com/psych.htm>**

### **Methylphenidate / Ritalin**

**Methylphenidate is used to treat Attention Deficit Disorder, and to augment the effects of antidepressants.**

**Possible side effects adverse to diving include:**

- Excessive stimulation: Consider decreasing the dose or waiting longer between doses.**
- Nervousness: This may occur when beginning to take this medication or increasing the dose.**
- Increased blood pressure: Have your blood pressure checked weekly while on this.**
- Increased resting heart rate: This tends to return to normal after a couple months.**
- Infrequent side effects may include: headache, abdominal discomfort, fatigue. "**

**The Ten Neurological Behaviors that are the Core and Associated Characteristics of ADD/ADHD from <http://www.addmtc.com/tenneur.html>**

**Attention Deficit Disorder is a neurological brain chemistry make-up involving neuroendocrine hormones and the synaptic system which connects one brain cell to another. The following is a list of neurologically (not**

psychologically) determined behaviors that are characteristic of ADD/ADHD people.

Children are born with their particular ADD/ADHD brain chemistry which evolves and changes with maturation but never fully disappears.

ADD/ADHD can be recognized in children. It is sometimes more obvious during the stress of the teenage years. Various aspects of ADD/ADHD brain chemistry always persists into adulthood.

The diagnosis of ADD/ADHD must be made clinically, not by presently available tests. It is dependent on the presence of at least several of the following TEN neurological abnormalities:

1. (\*)Academic underachieving and/or inattentiveness due to difficulty processing and understanding information.
2. (\*)Hyperactive or excessively fidgety behavior of varying intensity.
3. (\*)Impulsivity: a. Verbal (i.e., blurting or interrupting others) and b. Action (i.e., acts before thinking or shifts from one activity to another excessively).
4. Enuresis (bedwetting).
5. Dyslexia: a. Spatial (i.e., writing with reversals or reversing number sequences) and b. Verbal (i.e., let me invite me to your birthday party (inverted meaning)).
6. Falling asleep slowly (even if tired).
7. Coming awake slowly (unless excited).
8. Frequent irritability and easy frustration.
9. Negativity with or without "awful feelings": a. Holding on to anger and b. Holding on to negative thoughts.
10. Episodic explosiveness or "rage" or "tantrums" typically over "little things" or minor issues.

The UKSDMC do not address the subject.

Hope this is helpful!

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## **- Cool Scuba Tip Of The Week!-**

### **Irukandji and Marine Envenomation**

In our newsletter for Jan 30, 2002, 'Pearl of the Day!' the Irukandji Syndrome was highlighted. It is a constellation of signs and symptoms caused by envenomation by the cubozoan jellyfish *Carukia barnesi*. It is characterized by backache, arthralgias, myalgias, vomiting, pyrexia, dyspnea, severe pain, numbness, profuse sweating, anxiety, hypertension and tachycardia - associated with marked sympathomimetic (adrenalin like) symptoms.

The name comes from an aboriginal tribe near Cairns, Australia.

<http://www.mja.com.au/public/issues/xmas/letters/hadok.html>

"In 1943, whilst serving with troops stationed in the Cairns, north Queensland area, Dr Ron Southcott first described a strange syndrome that occurred in a group of troops who went swimming in the tropical seas. This syndrome presented with a minor skin sting but was followed approximately 30 minutes later by a bizarre set of distressing systemic symptoms. He called these Type "A" stings to distinguish between another group of jellyfish stings, which caused severe and instant local skin pain (Type "B" stings, later identified as being due to the Chironex box jellyfish). Still unaware of the cause, in 1952 Flecker named this set of delayed systemic symptoms the "Irukandji syndrome", after a local aboriginal tribe in the Palm Cove, Cairns area, where most of these envenomations occurred. However, it was not until 1966 that Dr Jack Barnes, using some amazing detective work, captured a small (1.5-2.0cm bell diameter) carybdeid (box jellyfish with just one tentacle in each corner). He then stung himself, his son and a volunteer lifesaver to see if it caused the Irukandji syndrome. All three ended up in the Cairns Base Hospital Intensive Care Unit with the typical severe systemic symptoms of the Irukandji syndrome described below (this is not a recommended procedure!). Southcott later named the jellyfish *Carukia barnesi* after its intrepid discoverer.

The "slang" name of Irukandji has previously been reserved for *Carukia barnesi*, but is now increasingly used for any jellyfish causing this bizarre syndrome. In this article the term "Irukandji" is used for any small carybdeid (small box jellyfish) causing the set of systemic symptoms known as the Irukandji syndrome. However, it must be remembered that no other small carybdeid jellyfish has ever been proven to cause this syndrome, even if it appears it may."

<http://www.tropmed.org/jellyfish/March2000/page4.html>

Welcome to Marine-Medic.com.au - Venomous Marine Animals - Web Links.

<http://snipurl.com/7npt>

The Irukandji Syndrome: A Devastating Syndrome Caused By A North Australian Jellyfish

<http://medschool.umaryland.edu/Departments/Dermatology/Jellynewslet/number23.htm>

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## **Irukandji and Marine Envenomation Articles**

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2 Fenner PJ, Harrison SL. [Irukandji and Chironex fleckeri jellyfish envenomation in tropical Australia](#) Wilderness Environ Med 2000 Winter;11(4):233-40

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3. . Wiltshire CJ, Sutherland SK, Fenner PJ, Young AR. [Optimization and preliminary characterization of venom isolated from 3 medically important jellyfish: the box \(Chironex fleckeri\), Irukandji \(Carukia barnesi\), and blubber \(Catostylus mosaicus\) jellyfish.](#) Wilderness Environ Med 2000 Winter;11(4):241-50

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4. Fenner PJ, Carney I. [The Irukandji syndrome: a devastating syndrome caused by a north Australian jellyfish.](#) Aust Fam Phys 1999; 28: 1131-1137.

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5. Wiltshire CJ, Sutherland SK, Winkel KD, Fenner PJ. [Comparative studies on venom extracts from three jellyfish: the Irukandji \(Carukia barnesi\), the Box Jellyfish \(Chironex fleckeri southcott\) and the Blubber \(Catostylus mosaicus\).](#) Toxicon 1998;36:1239

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9. Fenner PJ, Williamson JAH, Callanan V, Audley I. [Further under-standing of, and a new treatment for, "Irukandji" \(Carukia barnesi\) stings.](#) Med J Aust 1986;145:569-574.

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## Marine Envenomation Articles

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22. Fenner PJ. [Management of marine envenomation. Part 2: Other marine animals.](#) Mod Med Feb 1998: 90-95.
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24. Fenner PJ. [Dangers in the Ocean: The Traveler and Marine Envenomation. II. Marine Creatures.](#) J Travel Med 1998; 5: 213-216
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27. Mianzan HW, Fenner PJ, Cornelius PF, Ramirez FC. [Vinegar as a disarming agent to prevent further discharge of the nematocysts of the stinging hydromedusa Olindias sambaquiensis.](#) Cutis 2001 Jul;68(1):45-8
28. Burnett JW, Weinrich D, Williamson JA, Fenner PJ, Lutz LL, Bloom DA. [Autonomic neurotoxicity of jellyfish and marine animal venoms.](#) Clinical Autonomic Research 1998 Apr;8(2):125-30
29. Fenner PJ, Williamson JA, Burnett JW. [Clinical aspects of envenoming by marine animals. Envenomings and their treatments.](#)
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31. Burnett JW, Fenner PJ, Kokelj F, Williamson JA. [Serious Physalia \(Portuguese man o'war\) stings: implications for scuba divers.](#) J Wild Med 1994;5:71-76.
32. Burnett JW, Williamson J, Fenner P. [Mononeuritis multiplex after coelenterate](#)



[sting](#). Med J Aust 1994;161:320-322.

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34. Fenner PJ, Williamson JA, Burnett JW, Rifkin J. [A newly differentiated species of Physalia physalis in Australia](#). Med J Aust 1993: 158: 500

35. Fenner PJ, Williamson JA, Burnett JW, Rifkin J. [First aid treatment of jellyfish stings in Australia. Response to a newly differentiated species](#). Med J Aust 1993: 158: 498-501

36. Warrell DA, Fenner PJ. [Venomous bites and stings](#). Br Med Bull 1993 Apr;49(2):423-39

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41. Fenner PJ, Williamson JA, Skinner R. [Fatal and non-fatal stingray envenomation](#). Med J Aust 1989;151:621-625

42. Exton DR, Fenner PJ, Williamson JA. [Cold packs: effective topical analgesia in the treatment of painful stings by Physalia and other jellyfish](#). Med J Aust 1989 Dec 4-18;151(11-12):625-6

43. Williamson JA, Burnett JW, Fenner PJ, Hach-Wunderle V, Hoe LY, Adiga KM. [Case reports - acute regional vascular insufficiency after jellyfish envenomation](#). Med J Aust 1988;149:698-701

44. Burnett JW, Calton GJ, Fenner PJ, Williamson JA. [Serological diagnosis of jellyfish envenomations](#). Comp Biochem and Physiol 1988;Vol9C,No1:79-83.

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46. Fenner PJ, Fitzpatrick PF, [Experiments with the nematocysts of Cyanea capillata](#). Med J Aust 1986;145:174

47. Fenner PJ, Fitzpatrick PF, Hartwick RJ, Skinner R. ["Morbakka", another](#)

[cubomedusan](#). Med J Aust 1985;143:550-555.

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## - Hyperbaric Oxygenation-

Hyperbaric oxygen therapy in orthopedic conditions.

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):155-62.

[Kawashima M](#), [Tamura H](#), [Nagayoshi I](#), [Takao K](#), [Yoshida K](#), [Yamaguchi T](#).

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Acupuncture-HBO2 combined therapy in a persistent left hemiface hyperalgesia: a case report.

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):183. No abstract available.

[Zanon V](#), [Garetto G](#), [Bosco G](#).

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Hyperbaric oxygen as adjunctive therapy in Vibrio vulnificus septicemia and cellulitis.

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):179-81. No abstract available.

[Wang J](#), [Corson K](#), [Mader J](#).

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Carbon monoxide poisoning.

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):167-77. No abstract available.

[Piantadosi CA](#).

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Brain "implications for HBO2".

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):163-6. No abstract available.

[Mitani M](#).

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Hyperbaric oxygen for delayed radiation injuries.

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):133-45.

[Feldmeier JJ](#).

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Effect of hyperbaric oxygen on anastomoses created under the influence of 5-FU.

[Related Articles](#)

Undersea Hyperb Med. 2003 Winter;30(4):321-6.

[Erenoglu C](#), [Uluutku H](#), [Emeksiz S](#), [Akin ML](#), [Foley E](#), [Celenk T](#).

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## **HOSPITAL to open wound center**

Port Huron Times Herald - Port Huron, MI, USA

<http://www.thetimesherald.com/news/stories/20040710/localnews/818784.html>

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## **HYPERBARIC chambers coming to Baptist**

The Tennessean - Nashville, TN, USA.

[http://www.tennessean.com/business/archives/04/07/54106782.shtml?Element\\_ID=54106782](http://www.tennessean.com/business/archives/04/07/54106782.shtml?Element_ID=54106782)

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**Pulmonary barotrauma-induced cerebral arterial gas embolism with spontaneous recovery: commentary on the rationale for therapeutic compression.**

<http://tinyurl.com/2g9so>

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**Cerebral arterial gas embolism following diagnostic bronchoscopy: delayed treatment with hyperbaric oxygen.**

<http://snipurl.com/7r6i>

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**Hyperbaric oxygen therapy of iatrogenic cerebral arterial gas embolism.**

<http://snipurl.com/7r6e>

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## **Large Dallas based, wound and hyperbaric group looking to add 5th physician**

PHYSICIAN POSITION PROFILE: HYPERBARICS AND WOUND CARE

**PROFESSIONAL OPPORTUNITY:** We have a clinically hospital based practice that continues to increase in patient volume yearly. We currently have 4 HBO and wound centers in the Dallas metroplex. Our growing practice encompasses patients with chronic non-healing wounds, many of whom are at high risk for amputation. Although our practice is mainly clinical, many research opportunities abound through our affiliation with the University of Texas Southwestern Medical Center.

We use an aggressive and comprehensive wound management program which includes the use of hyperbaric oxygen. We are the referral center for the Diver's Alert network and the poison control center.

**COMPENSATION PACKAGE:** Our first year's salary is an attractive base guarantee with an opportunity for bonus potential. The bonus potential will be based on the candidate's ability to appeal to patients and deliver quality care. For the right candidate, we are prepared to provide a moving expense advance and sign-on bonus. Fringe benefits the first year may include paid professional liability insurance, health insurance, continued medical education, vacation and professional dues allowance. After the first year, the physician will enjoy a profit sharing plan.

**ADDITIONAL INFORMATION:** For additional information contact:

Dr. Jeff Stone  
Wound Care Consultants  
Limbsalvagecentre  
5481 Blair Rd.  
Dallas, TX. 75231  
[WWW.Wound.com](http://WWW.Wound.com)  
Office 214 265-9408  
Fax: 469-374-9018  
Email [jstone3@wound.com](mailto:jstone3@wound.com)

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# - Mailbox Potpourri-

## Cardiac Stents

Question:

Do you know of any studies or reports on scuba divers who have had cardiac stents?

This patient is a 65 yr/o avid experienced diver who is completely asymptomatic, even on heavy exercise and diving. However, on 1/13/04 he had a myocardial perfusion stress test which showed 2mm downsloping ST depression inferolaterally, suggestive of ischemia of inferior wall. His resting pulse was 55 bpm and NSR. The EKG changes were seen at 154 bpm. Resting BP 102/70 and peak BP 162/70. No arrhythmia.

I have suggested that he have a cardiac angiogram and probably a cardiac stent, however, his concern is whether or not he will be able to dive with a cardiac stent.

Answer:

At the present time, the most likely reason for a diver over the age of 40 to die suddenly while diving is a heart attack with an accompanying fatal heart rhythm. Patients who have had successful coronary bypass surgery, angioplasty or stents who wish to resume sport diving should generally be allowed to participate in this activity. However, commercial, military or civic divers probably should not be allowed to continue diving due to the increased physical and mental stress of the dives. There is a high rate of re-stenosis after angioplasty [30%] and stenting [20%], usually within 6 months.

Within the limits of the brief history that you provide, the diver should be able to resume sport diving with a normal thallium exercise test. In deciding whether to dive, there should be a careful periodic review of coronary anatomy and degree of vascularization. An exercise tolerance (exercise test) study should be undertaken. If they can exercise with no ischemia (decreased blood supply), or angina (chest pain), normal blood pressure response, and no serious heart irregularity (arrhythmia), limited sport diving may be considered. Limited sport diving involves warm water ( 3 mm wet suit ), shallow depths ( 60 fsw/18.3 m. ) and minimal currents with easy entry and exits.

The diver will need to keep his weight and blood pressure under control and maintain an exercise program and attempt to reduce as many risk factors as possible. His cardiologist should be the final arbiter in making the decision as to whether or not they may return to diving.

More information about coronary disease, exercise and heart problems related to diving can be found at:

<http://scuba-doc.com/hrtprb.html>

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## Old Information?

Question:

**Dear Diving Medicine:**

**I note the information below and the date of the research.**

**"Testing for coronary heart disease can be done by exercise stress testing, and should be done in diver candidates over the age of 40 or those with known or suspected coronary heart disease (Bruce and Hornstein 1969)".**

**Is this still the current view - if over 40yrs ?- candidate must have a stress test? - See below ...**

should be done  
....over 40yrs of age etc..

regards

GP in the uk

Answer:

Thank you for your query. The article that we quoted and that you question is still quite valid today, if you consider the information provided by Divers Alert Network in it's latest report on diving fatalities.

Based on 2002 data, the 2004 Edition, Report on Decompression Illness, Diving Fatalities and Project Dive Exploration states [Section 4] that of the 89 deaths in divers that they studied, the largest proportion was in the 40-59 age groups [almost 15 %]. The largest chronic health conditions reported were high blood pressure and heart disease. [This figure remained largely the same over the last several years]. Obesity was also significantly present in the fatalities. Coronary artery disease is highly associated with high blood pressure and is positively correlated with obesity.

The UKSDMC appears to have taken a 'hands off' attitude about exercise or stress testing of diver candidates. <http://tinyurl.com/ywj5m> .

It actually states that exercise testing has been 'discredited'; "the value of screening exercise tests in apparently normal populations has now been largely discredited because of the appreciable false positive and false negative results in such groups." This, of course, appears to me to have a great deal to do with cost of procedures rather than an indictment of your medical system.

However, the UKSDMC go on to state what would appear to be obvious - that positive answers to a questionnaire should be used to weed out those who are at increased risk for a coronary event, such as HBP, obesity, cigarette smoking, diabetes, positive family history, hyperlipidemia and chest pain and shortness of breath. Then, it seems that the exercise stress testing suddenly becomes more valid, particularly if ordered by a cardiologist.

Ideally, every new diver 40 years of age or over should undergo some form of stress testing. This will probably never happen. The focused stance of the UKSDMC appears to be a reasonable compromise.

What do you think?

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Diving a Cause of Deep Vein Thrombosis?

In February 2004 I slipped on some ice and broke my left ankle. It was the small bone and I was in a brace for 6 weeks. 8 weeks after the ankle break my ankle was still significantly swollen but I felt well enough to make a dive trip to St. Lucia. My orthopedist said the diving would be good therapy for my leg. I made one dive on Sunday and two dives each day on Monday and Tuesday with a maximum depth of 60 feet. I felt fine while diving. On Saturday evening while still in St. Lucia I had a pulmonary embolism. When I got back to the U.S. an ultra sound was done on my left leg and a blood clot was found behind my knee and the diagnosis was DVT. I have been on blood thinning medication for two months now. Two weeks ago I had another ultra sound on my left leg and I still have a blood clot in my calf.

A friend of mine who works in a hospital as an occupational therapist insists that the DVT is a result of my diving in St. Lucia. My question: Is there any known correlation between DVT and diving?

Thank you for any information you might provide,

Answer:

**Your friend may know something that I don't know - but there have not been any studies that relate deep vein thrombosis to diving. The most likely scenario is that you already had a clot from the injury and this was worsened by the air craft travel with pressure on the back of the legs in a dehydrating atmosphere of the air craft cabin.**

**You should do no more diving as long as you are on the anticoagulant, due to the increased risk of barotrauma of the ears, sinuses and lungs with significant bleeding and damage to those organs.**

**Finally, there is some indication that anticoagulants may actually worsen neurologic outcome in decompression accidents by causing hemorrhagic lesions to worsen (Bove, 1997, p.198.). There are no studies on this subject - only isolated reports of the use of coumadin in PTE in a person after having had neurological DCS. (Spadaro, Moon, Fracica: Life threatening PTE in neurological decompression illness. Undersea Biomed Res 19 (Suppl): 41-42, 1992. )**

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**- Interesting Links-**



**From Omar Sanchez, MD**

**Headache and facial pain in scuba divers.**

<http://snipurl.com/7rhv>

See also <http://www.scuba-doc.com/headache.html>

<http://www.scuba-doc.com/entprobs.html>

<http://www.scuba-doc.com/diveye.htm>

<http://www.scuba-doc.com/dendiv.htm>

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**Rebreathers, Dive Training Magazine**

<http://www.dtmag.com/07-04-rebreather.shtml>

See also <http://www.scuba-doc.com/oxygentox.html>

<http://www.scuba-doc.com/pulo2tox.htm>

**Reactive oxygen species and cell signaling with lung ischemia.**

[Related Articles](#)

Undersea Hyperb Med. 2004 Spring;31(1):97-103

[Fisher AB.](#)

**Cerebral Gas Embolism References (Some of these may require you to register [free].**

**Arterial gas embolism progressing to a massive stroke**

<http://tinyurl.com/3633w>

See also <http://www.scuba-doc.com/ageprbs.html>

**Pulmonary barotrauma-induced cerebral arterial gas embolism with spontaneous recovery: commentary on the rationale for...**

<http://snipurl.com/64fd>

:

**Fatal air embolism during computed tomography-guided pulmonary marking with a hook-type marker**

<http://snipurl.com/7r65>

**Gas embolism: pathophysiology and treatment.**

<http://snipurl.com/7r66>

:

**Diagnosis and treatment of gas embolism**

<http://snipurl.com/7r6b>

:

**Arterial gas embolism and decompression sickness.**

<http://snipurl.com/7r6g>

:

**Delayed-onset cerebral arterial gas embolism in a commercial airline mechanic.**

<http://snipurl.com/7r6m>

**Submarine escape from depths of 30 and 60 feet: 41,183 training ascents without serious injury.**

<http://snipurl.com/7r6o>

**The pathophysiology of cerebral arterial gas embolism.**

<http://snipurl.com/7r6q>

:

**Documented arterial gas embolism after spinal epidural injection**

<http://snipurl.com/7r6r>

:

**Arterial gas embolism in a diver using a closed-circuit oxygen rebreathing diving apparatus.**

<http://snipurl.com/7r6x>

**Microdialysis in cisterna magna during cerebral air embolism in swine.**

<http://snipurl.com/7r6z>

**Barotrauma.**

<http://snipurl.com/7r74>

**Cerebral and coronary air embolism: an intradepartmental suicide attempt**

<http://snipurl.com/7r7a>

**Diving emergencies**

<http://snipurl.com/7r7b>

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**Links from Larry "Harris" Taylor**

**Diving:**

Chesapeake Research Consortium: <http://www.chesapeake.org/>

Medicine (Jolie Bookspan): <http://www.drbookspan.com/>

Storsjoodjuret: <http://www.storsjoodjuret.com/>

Great Lakes Info Net: <http://www.great-lakes.net/>

Klaus Jost: <http://www.jostimages.com/>

Lake Champlain: <http://www.uvm.edu/~seagrants/>

National Sea Grant : <http://www.nsgo.seagrants.org/>

Dive Site Directory: <http://www.divesitedirectory.com/>

General Slocum Disaster: <http://www.general-slocum.com/>

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**Death of cave divers highlights sport's peril**

<http://snipurl.com/7r7z>

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**DIVER dies near shipwreck off coast of Long Island**

Newsday - Long Island,NY,USA

<http://snipurl.com/7r81>

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## PADI Teams with National Geographic Society to Launch New Diver Program

<http://tinyurl.com/29ybo>

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## Near-drowning, scuba diving: an unusual late sequela of bulbar polio.

<http://tinyurl.com/yvbkq>

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## Autopsy Fact File.pdf (application/pdf Object)

<http://tinyurl.com/22qgh>

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## DIVER dies in Antrim accident

Ireland Online - Dublin,Ireland

<http://212.2.162.45/news/story.asp?j=90709100&p=9x7x968x&n=90709709>

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## [SCUBA diver dies near Beachy Head](#)

BBC News - London,England,UK

A scuba diver has died in an accident in the water off the coast of Sussex. Dover Coastguard picked up a mayday call from a dive ...

[See all stories on this topic](#)

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## [VS diver dies at sea](#)

Valley Stream Herald - Valley Stream,NY,USA

... The drowning was termed an accident, but an investigation is continuing, according to ... Homicide Division searched for some of Lobue's lost scuba equipment last ...

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## [RCMP release name of man who died in diving accident in Nova ...](#)

Canada East - Canada

... CP) - RCMP have released the name of a man who died in a diving accident in southwestern ... look for him, but ran low on air and surfaced to change his scuba tank ...

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## [DIVING novice dies](#)

NEWS.com.au - Australia

... man but he died at the scene. It was unclear whether the scuba diver died from a medical condition or a diving-related accident.

[See all stories on this topic](#)

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## Carnarvon-Ningaloo Coast Regional Strategy

<http://snipurl.com/7d5s>

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## Mortality in relation to smoking: 50 years' observations on male British doctors

<http://snipurl.com/7r2q>

See also <http://www.scuba-doc.com/smkndvng.htm>

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## Heart Defect Poses Scuba Diving Risk

<http://snipurl.com/7r18>

See also <http://www.scuba-doc.com/mgrns.htm>

<http://www.scuba-doc.com/pfo.htm>

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## - Meetings, Courses and Conferences-

The latest news about meetings and courses can best be obtained by going to the respective web sites of the agencies involved. These are listed on our web page at <http://scuba-doc.com/meetcrse.html> .

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### From the UHMS re Fitness to Dive Courses

THIS IS TO INFORM YOU THAT WE HAVE DATES FOR THE MEDICAL ASSESSMENT OF FITNESS FOR DIVING COURSE IN MEXICO, CANADA, AND HOUSTON, TX.

MORE INFORMATION INCLUDING A REGISTRATION FORM CAN BE FOUND ON THE WEB AT <http://www.uhms.org/Courses/Fitness%20to%20Dive/FITNESS%20TO%20DIVE.htm>. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT DON CHANDLER AT 301.942.2980 X101.

**JULY 17 -20, 2004:** Mexico, Hospital Angeles Del Pedregal (course will be in Spanish)

**SEPTEMBER 10-13, 2004:** Quebec City, Canada, Delta Quebec

**OCTOBER 9-12, 2004:** Houston, Texas, Marriott @ George Bush International Airport

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**The Pacific Chapter of the Undersea & Hyperbaric Medical Society (UHMS) will hold it's Annual Scientific Conference on Friday, September 10, 2004 & Saturday, September 11, 2004 in San Diego, California**

Friday, September 10<sup>th</sup> will be a combination of new research presentations and reviews in both diving and clinical hyperbaric medicine. Topics will be of interest to all types of professionals in the hyperbaric field. Saturday, September 11<sup>th</sup> will be "Diver Day" Seminar. These presentations will be of interest to medical & hyperbaric professionals, as well as recreational, commercial & scientific divers.

The conference site will be the [San Diego Marriott Mission Valley](#). The San Diego Marriott Mission Valley is located at 8757 Rio San Diego Drive, San Diego, CA 92180, Phone: (619) 692-3800. The hotel is conveniently located within 10 miles of the Airport, San Diego Beaches, the San Diego Zoo and Sea World.

## **Medical Seminars next conference will be at Little Cayman, November 6-13, 2004.**

**Little Cayman**, the new diving "hot spot" in the Caribbean, is now one of our annual destinations. The entire resort has been reserved for our group. The **Little Cayman Beach Resort** is a small dedicated dive resort located just minutes away from the fabulous dive sites of **Bloody Bay Wall**. We now have every diver's dream destination, with diving services provided by **Reef Divers**.

Academic Faculty will be Paul Sheffield, PhD, Caroline Fife, MD, Scott Flinn, MD, and Douglas Ebersole, MD  
CME Credit is 22 hours Category I.

A brochure can be ordered at <http://www.medsem.com/contact.html>

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## **-Humor-**

### **"New Virus" warning from Jose Kirchner!**

There's a new virus. The code name is "**WORK**." If you receive WORK from your colleagues, your boss, via e-mail, or from anyone else -- do not touch WORK under any circumstances. **This virus wipes out your private life completely.**

If you should happen to come in contact with this virus, take two friends and go straight to the nearest bar. Order drinks -- and after three rounds, you will find that WORK has been completely deleted from your brain.

Forward this virus warning immediately to at least five friends.

Should you realize you do not have five friends, this means you are already infected by this virus and WORK already controls your whole life.

If this is the case, go to the bar and stay until you make at least five friends. Then retry.

I think I have five friends, but am not entirely positive -- so I'm headed for the bar anyway. Never hurts to be safe.

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### **Medical Test**

An 85-year-old man went to his doctor's office to get a sperm count. The doctor gave the man a jar and said, "Take this jar home and bring back a semen sample tomorrow."

The next day the 85 year old man reappeared at the doctor's office and gave him the jar, which was as clean and empty as on the previous day. The doctor asked what happened and the man explained:

"Well, doc, it's like this - First I tried with my right hand, but nothing. Then I tried with my left hand, but still

nothing.

"Then I asked my wife for help. She tried with her right hand, then her left, still nothing. She tried with her mouth, first with the teeth in, then with her teeth out, and still nothing.

"We even called up Earleen, the lady next door and she tried too, first with both hands, then an armpit and she even tried squeezin' it between her knees, but still nothing."

The doctor was shocked! "You asked your neighbour?"

The old man replied,! "Yep. And no matter what we tried we still couldn't get the jar open!"

What were you thinking?

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Subject: Best of Corn

1. Two antennas meet on a roof, fall in love and get married. The ceremony wasn't much, but the reception was excellent.

2. Two hydrogen atoms walk into a bar. One says, "I've lost my electron." The other says, "Are you sure?" The first replies, "Yes, I'm positive..."

3. A jumper cable walks into a bar. The bartender says, "I'll serve you, but don't start anything."

4. Two peanuts walk into a bar, and one was a salted.

5. A dyslexic man walked into a bra.

6. A man walks into a bar with a slab of asphalt under his arm and says: "A beer please, and one for the road."

7. Two cannibals are eating a clown. One says to the other: "Does this taste funny to you?"

8. "Doc, I can't stop singing 'The Green, Green Grass of Home.'" "That sounds like Tom Jones Syndrome." "Is it common?" "It's Not Unusual."

9. Two cows standing next to each other in a field, Daisy says to Dolly, "I was artificially inseminated this morning." "I don't believe you," said Dolly. "It's true, no bull!" exclaimed Daisy.

10. An invisible man marries an invisible woman. The kids were nothing to look at either.

11. Deja Moo: The feeling that you've heard this bull before.

12. A man takes his Rottweiler to the vet and says, "My dog's cross-eyed, is there anything you can do for him?" "Well," says the vet, "let's have a look at him." So he picks the dog up and examines his eyes, then checks his teeth. Finally, he says, "I'm going to have to put him down." "What? Because he's cross-eyed?" "No, because he's really heavy."

13. Apparently, one in five people in the world are Chinese. And there are five people in my family, so it must be one of them. It's either my mom or



my dad, or maybe my older brother Colin or my younger brother Ho-Cha-Chu.  
But I'm pretty sure it's Colin.

14. I went to buy some camouflage trousers the other day but I couldn't find any.

15. I went to the butcher's the other day and I bet him 50 bucks that he couldn't reach the meat off the top shelf. He said, "No, the steaks are too high."

16. A man woke up in a hospital after a serious accident. He shouted, Doctor, doctor, I can't feel my legs!" The doctor replied, "I know you can't - I've cut off your arms!"

17. I went to a seafood disco last week... and pulled a mussel.

18. Two Eskimos sitting in a kayak were chilly; but when they lit a fire in the craft, it sank, proving that you can't have your kayak and heat it too.

19. What do you call a fish with no eyes? A fsh.

20. Two termites walk into a bar. One asks, "Is the bar tender here?"

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You know you're a hill billy when ...

1. You take your dog for a walk and you both use the same tree.

2. You can entertain yourself for more than an hour with a fly swatter.

3. You burn your yard rather than mow it.

4. You think the Nutcracker is something you do off the high dive.

5. The Salvation Army declines your mattress.

6. You think fast food is hitting a deer at 65 mph.

7. You offer to give someone the shirt off your back and they don't want it.

8. You come back from the dump with more than you took.

9. You keep a can of Raid on the kitchen table.

10. Your grandmother has Ammo on her Christmas list.

11. You think a subdivision is part of a math problem.

12. Your kids take a siphon hose to show and tell.

13. You have used a rag for a gas cap.
14. Your house doesn't have curtains but your truck does.
15. You wonder how service stations keep their restrooms so clean.
16. You can spit without opening your mouth.
17. You consider your license plate personalized because your father made it.
18. You have a complete set of salad bowls, and they all say Cool Whip on the side.
19. Your working TV sits on top of your non-working TV.
20. You've used your ironing board as a buffet table.
21. You think a quarter horse is that ride in front of K-Mart.
22. Your neighbors think you're a detective because a cop always brings you home.
23. A tornado hits your neighborhood and does a \$100,000 worth of improvement.
24. You've used a toilet brush as a back-scratcher.
25. You missed 5th grade graduation because you had jury duty

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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, MD, FACS**  
Diving Medicine Online  
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DAN Physician Consultant



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## Translate this Page

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