Diving Medicine

Ten Foot Stop Newsletter

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Need to Know!

Two things occurred last week that have slowed down our responses to you and have caused us to lose significant data and contact sources. First, a joker/hacker got into the Invision Bulletin Board and replaced our Dive Medicine Forum with a sound cartoon. This wasn't funny, but even worse, lightning struck us and toasted both of my computers - with the almost total loss of data. Some files are OK due to backups but we've lost very valuable contact sources. The lightning came in via the cable and telephone lines - so the surge protector didn't help at all.

Now, we're back on line, files are repaired and we have a new forum, named Scuba Clinic which can be accessed from our main web page at http://scuba-doc.com/ or directly at http://scuba-doc.com/scubaclinic/ .

In Memoriam:

Many of you knew or knew of Dr. Ed Thalmann. Here is a letter from Dan Orr, of DAN, concerning his passing.

Dear Ern:

I thought you would want to know about the passing of Ed Thalmann. He passed away on Saturday, 24 July 2004 at his home in Durham, NC. Funeral Services will be held on Wednesday at 11:00 AM at the Howerton-Bryan Funeral Home Chapel, 1005 W Main Street, Durham, NC 27701. In lieu of flowers, donations can be made in his name to:

Durham Rescue Mission
507 E. Knox St.
Durham, NC 27701

or

Immaculate Conception Catholic Church
810 W Chapel Hill Street
Durham, NC 27701

Thank you.

Dan Orr

Here is an Obituary written by Dr. Tom Neuman:

Ed Thalmann, M.D., Assistant Medical Director at DAN, Dies
Ed Thalmann, M.D., an Assistant Medical Director of Divers Alert Network for nine years, died July 24 in his Durham, N.C., home. He was 59.
Dr. Thalmann, regarded as one of the world's foremost authorities on diving decompression, joined DAN in July 1995 as the organization's assistant medical director. He functioned as the physician resource for DAN medics, consulting with dive medicine physicians who treated patients worldwide. He headed DAN's continuing education programs for the medical staff and on-call doctors; he also participated in numerous research efforts.
Michael D. Curley, Ph.D., president and CEO of DAN, was a longtime colleague of Thalmann's, beginning in the U.S. Navy. "We mourn the passing of a truly prodigious talent, a wonderful diving physician and a fine man," Curley said. "During the past 25 years Ed Thalmann guided and inspired a generation of dedicated researchers in undersea medicine; his high standards of excellence and commitment to improving diving safety are gratefully acknowledged.
"Ed led by example, exhibiting courage by performing the same arduous experimental dives as his volunteers and risking the 'bends' and oxygen-induced seizures underwater. Whether developing new guidelines for decompression, diver thermal protection, underwater breathing apparatus or exposure to underwater sound, Ed always kept focused on improving diver safety. He leaves a great legacy of scientific excellence which we seek to emulate."
Peter B. Bennett, Ph.D., D.Sc., founder and former DAN president and former CEO of DAN, praised Dr. Thalmann's work both at DAN and Duke University Medical Center. "Dr. Thalmann's long U.S. Navy career and his vast expertise on decompression theory and practice have been a great asset since he joined DAN on his retirement from the U.S. Navy," Bennett said. "His unique contributions will be very much missed by all his DAN and Duke Hyperbaric Center colleagues."
Dan Orr, executive vice president of DAN, described Dr. Thalmann as a dynamic and passionate personality. "He was always willing to contribute his ideas to any conversation or a debate on any subject related to dive medicine or safety," Orr said. "His many contributions - as a medical officer in the U.S. Navy, as staff member at Duke Medical Center and as assistant medical director at DAN - have certainly improved the body of knowledge in the field of diving medicine and our

industry.
"As a result of his contributions, all DAN members are safer. We are all better because of him and we are diminished by his loss."
While at DAN, Dr. Thalmann also worked on the Duke University Medical Center medical staff, the Duke Anesthesiology Department and at the Center for Hyperbaric Medicine and Environmental Physiology. There, he participated in both patient care (dive accidents and clinical hyperbaric oxygen treatments) and in medical research programs.
With Richard D. Vann, Ph.D., DAN Vice President of Research, he co-authored the decompression physiology chapter of the third edition of *The Physiology and Medicine of Diving* and he wrote a section on decompression sickness for the *Handbook of Physiology, Adaptation of the Environment.*
Dr. Thalmann retired from the U.S. Navy in 1993 after 22 years. While in the Navy, he helped develop operational procedures for diving, testing and evaluation of diving life-support equipment and medical research programs.
Projects included the development of new diving decompression tables (surface-supplied and saturation), measuring the performance of and writing specifications for diver thermal protective equipment, studying the effects of underwater exercise on diver performance and improving underwater breathing apparatus design and testing.

While in the service, he spent a year as the medical officer aboard the nuclear Polaris submarine *USS Thomas Jefferson*, and he was assigned to the Navy Experimental Diving Unit (NEDU), in Washington, D.C. and Panama City, Fla. At NEDU, he was mainly involved in decompression table development, treatment of decompression sickness (the "bends") and in formulating100 percent oxygen exposure limits. He spearheaded two major revisions to the Diving Medicine chapter of the U.S. Navy Diving Manual in 1985 and 1993.
He also did a two-year postdoctoral fellowship under Claes Lundgren and Hermann Rahn at the University of Buffalo; there he studied the effects of immersion and breathing bag placement in rebreathers on underwater exercise as deep as 190 fsw / 58 msw breathing air.
>From 1985-87, he worked as the U.S. Navy exchange officer with the Institute of Naval Medicine in England, continuing decompression table development and working with the Royal Marines on improving their thermal protection garments.
Dr. Thalmann finished his tour in the Navy at the Naval Medical Research Institute in Bethesda, Md. as its head of diving medicine and physiology research. There, he was principal investigator for the Navy?s decompression research program.
Dr. Thalmann attended medical school at Georgetown University.
He is survived by Brenda Thalmann, former wife, and two daughters: Amanda and Katherine Thalmann, both of Durham, N.C.
Visitation will be from 7-9 p.m. Tuesday, July 26 at the Howerton-Bryan Funeral Home, 1005 W. Main St., Durham, N.C. 27701. Funeral services will be held at 11 a.m. Wednesday, July 27 at Howerton-Bryan Funeral Home chapel. In lieu of

flowers, donations can be made in Dr. Thalmann's name to:
Durham Rescue Mission
507 E. Knox St.
Durham, NC 27701

Challenges of Diving with Disabilities

Have you ever been on a night dive and had your lights go out? Or, imagine yourself doing a shore dive and you find that someone has tied your feet together; just imagine the difficulty of dragging yourself in and out of the water; or of being unable to signal distress to your buddy because of paralysis of your hands?

These are just a few of the challenges that face disabled people who want to experience the serenity and beauty of scuba diving: the blind person is forever in pitch darkness, the paraplegic faces this wall every day.

In spite of these seemingly insurmountable obstacles, there are many disabled who are participating in scuba diving programs especially designed to assist them to experience our sport safely.

We recently were contacted by Tammie Shelton about providing information concerning divers with disability. I asked her to write an article describing how a diving expedition is carried out. I found her account fascinating and publish it here for you to get some insight into some of the problems that arise and how they are managed in the unforbidding milieu of the underwater world.

"Eels on Wheels Adaptive Scuba Club, a non-profit organization based in Austin, Texas, was formed in 1991 for the purpose of promoting independence and enhancing physical, emotional, psychological and social well-being for children and adults with disabilities through SCUBA diving adventures. Eels prides itself on safely adapting SCUBA so that almost any person can enjoy the adventure. The Eels have taken 13 successful trips together, visiting places such as Cayman Brac, Bonaire, and Roatan. In June, 2004, Eels on Wheels Adaptive Scuba Club visited Ambergris Caye, Belize.

This particular trip was one of our smaller ones, with only twenty-two people (all adults). Of

the twenty-two, eighteen were divers, including six in wheelchairs (three with paraplegia and three with quadriplegia). Eels on Wheels stresses the safety and fun for all of its members, which requires certain adjustments to be made in order to ensure their well-being during dives. Most of our paraplegic members are able to dive virtually unassisted, so the adjustments mentioned here are for the benefit and safety of our quadriplegic divers. We have many male and female divers in our group; for the sake of reading ease, male gender is used.

We carefully split up our group between two boats, equalizing the ability levels of the disabled divers and the expertise of the able-bodied divers. We placed nine divers (including three in wheelchairs) on each boat, plus the native divemaster and boat captain. Each quadriplegic diver must be paired with two buddies, one primary and one secondary. One of the buddies requires a certification level of rescue or above because of the extra care and assistance required for the quadriplegic diver.

In calm seas, gearing the quadriplegic diver in the water is a good option, as they easily float with their wetsuits. By lowering them into the water without their gear, a safer, more controlled entry can be made. Eels on Wheels highly recommends buoyancy control devices that are weight integrated and have shoulder clips, which ensures easier placement and removal on the surface. A series of tropical squalls had left the island just as Eels arrived, leaving a trail of rough, 4-6 foot seas for the first couple of days, so gearing in the water was not a safe option in this case. Back-roll entries off the side rails were required based on the sea conditions and the type boats provided. We typically dive off of boats with platforms on the aft – so back-roll entries created a bit of a challenge for our newer divers, especially with the rough seas. Since people with quadriplegia have no proprioception below their injury, we had to pay particular attention to their legs and arms. So we kept one able-bodied buddy in the boat to assist with the entry and had one able-bodied buddy waiting in the water. That way, we could watch from all angles above and below the water to ensure that the quadriplegic diver made the entry clear of all obstructions. Once the boat crew and third buddy help lower the quadriplegic diver into the water, the primary buddy (already in the water) ensures that legs and arms are clear and then immediately flashes an okay sign in the mask of the quadriplegic diver. Depending on the level of injury of the quadriplegic diver, he can usually respond with a nod or a grunt. If the response is negative or not understood, the primary buddy places the quadriplegic diver in a face up position so he can verbalize his concern. Once the response is okay, the descent begins.

During the descent, buddy awareness is paramount. The primary buddy and quadriplegic diver must descend together, with the primary buddy controlling the rate of descent by inflating or deflating both divers' buoyancy control devices. Many of our quadriplegic divers are able to make independent descents, but the primary buddy must be aware of the quadriplegic diver's equalization issues and be available to take control of the descent immediately. Most of our quadriplegic divers have enough arm and hand motion to be able to equalize on their own; however, at times the primary buddy must assist by pinching the nose of the quadriplegic diver. Another issue during descent is equipment adjustment. The quadriplegic divers are unable to don their equipment alone, and it is almost impossible for the crew to place their equipment on them properly and snugly while on a rocking boat (another reason we prefer gearing up on a

calm water's surface). So they secure it well enough to not lose it during entry, and the primary buddy tightens and adjusts all equipment during the descent. Once the divers arrive at the planned depth, the primary buddy assists the quadriplegic diver with neutral buoyancy. Many of our quadriplegic divers are able to move their arms enough to initiate forward motion – in that case; the primary buddy swims along side and is available at a split second's notice. In adverse conditions such as strong current or a tired diver, the primary and secondary buddies swim along either side of the quadriplegic diver and "tow" by holding BC shoulder straps. This placement increases ease of communication by allowing the primary buddy to see the quadriplegic diver's eyes, and allowing the quadriplegic diver to signal the primary buddy quickly and effectively either by using grunts or arm movements.

Communication underwater provides another challenge when diving with people who have quadriplegia, as they do not have full (or any) use of their hands. Our divers brief each other before every dive on communication in order to determine what signals can or can not be used. Then we typically use a question-asking scenario, going from worst-case scenario to least. For example, if a quadriplegic diver wants to communicate, he may grunt in his regulator to get the attention of the primary buddy. The primary buddy can then ask the quadriplegic a series of questions using hand signals until he arrives at the desired signal. Another communication option is to carry a slate with different words on it such as cold, tired, up, cool fish, awesome, and so on. The primary buddy can point to a word and look for a response from the quadriplegic diver. Responses can range from head nods to blinking eyes, to simply looking at the appropriate word – the primary buddy can usually follow the sight line to interpret the word correctly.

All divers with Eels on Wheels follow standard recreational dive limits. We always complete our deepest dive first and follow the same depth and time profiles and surface intervals as those recommended for able-bodied recreational divers. Eels divers stress a slow ascent to the surface, following standard ascent rates. All dives end with a three to five minute safety stop.

Ascents follow the same procedures as descents, in reverse. Our preferred dive profile follows multi-level diving outlines, with several minutes spent at 40 feet, 30 feet, and 20 feet, before the safety stop at 15 feet. Again, many of our quadriplegic divers have enough movement ability to control their own ascent; however, the primary buddy must be immediately available to take control. The primary buddy also must control the safety stop and ascent rate for both himself and the quadriplegic diver, which again makes buddy awareness imperative.

Assisting quadriplegic divers back into the boat safely offers even more challenge than placing them into the water. Upon breaking the surface, the primary buddy immediately ensures both his and the quadriplegic diver's positive buoyancy. Then he issues the okay sign to the boat and rolls the quadriplegic diver to a supine position in the water. The diver keeps the regulator in his mouth as long as he is still wearing his equipment. The secondary buddy returns to the boat in order to be of assistance in pulling the quadriplegic diver out of the water. The primary buddy removes the equipment from the quadriplegic diver, similar as in a rescue scenario – weight belt (if an integrated weight system is not used), then buoyancy control device and tank, passing all equipment to either another diver or to the boat captain. (Quadriplegic divers do not wear fins,

and the mask stays in place until the diver is back in the boat.) The straps on the BCD are loosened and unclipped, but the regulator is not removed and the unit not pushed away from the diver until the boat crew is ready to pull the diver back into the boat. Once the crew is ready and all equipment has been removed, two people in the boat pull the quadriplegic diver back into the boat with the primary buddy pushing the diver's buttocks from the water. This pull-push motion helps to keep the diver's legs from banging the hull of the boat.

Safely diving with people who have quadriplegia takes special training, planning, fine-tuned buddy awareness and a great deal more muscle than diving independently. But the freedom from wheelchairs and increased self-esteem that SCUBA diving provides for people with disabilities makes it well worth the additional work for all involved."

For more information, please contact:

Tammie Shelton or Chad Dieterichs, M.D.
Tammie@eels.org Chad@eels.org
(361) 946-6983

Links on our web site

Disabled diving
... Associations and Clubs and Training. **Disabled** Diver training in the San Diego area. **...** IAHD, are a non-profit organization for **disabled** divers. **...**

[PDF] **Disabled** diving

Spina Bifida and Diving
... Dr. Chris Edge feels that these people can dive with a **disabled** diving group and that none of their problems are insurmountable. **...**

Diving Safety
... Scuba Diving Emergency, Rescue Plan, The Importance of a First Aid Kit, Man Overboard, Problems With Moving Water, Safe Scuba,Diving Safety for the **Disabled**. **...**

Spanish Doctor Added to Our Diving Medical Examiners List

JOSÉ MANUEL GONZÁLEZ VALLECILLO, MD.
INSTITUTO SOCIAL DE LA MARINA
C/ Avda sotileza s/n (barrio pesquero), 39003 Santander (Spain).
Telephone: 00-34-942-214600
00-34-696-578014

Work Medicine.
From 1997 medical examiner of the Spain Divers.

Course: Hyperbaric and Dive Medicine by University of Santiago Compostela (Spain)).
First-Aid in Diving Accident instructor.
Medical staff: TECNOSUB SPAIN
Email: JOSEMAGV@ONO.COM

Dr. Jolie Bookspan has kindly allowed us to publish another article, titled **Bad Discs, Sciatica and Diving** which can be accessed at **http://scuba-doc.com/bone.htm .** If you have a bad back and are thinking about diving or quitting diving - this is required reading.
Dr. Bookspan's web site is at www.DrBookspan.com .

The UK magazine, Commercial Diver International has requested that we answer occasional questions posed in their diver forum. We have agreed to answer queries that are in our areas of expertise. Here is the latest question and our answer:

"Can you still dive after ear surgery? Are there any problems/new problems you can expect with clearing your ears? What can you do to help your ears, particularly after surgery?"

Here is an answer. I must say that the questions are quite vague and it is very difficult to give a sensible response.

"Return to diving after "ear surgery" depends to a great extent on the type of surgery and whether or not the operation was successful. Since we are not given a great deal of specific information we will have to offer a generalized answer..

Two main conditions must be satisfied: water (infection and vertigo) must not be allowed to enter the middle ear and the middle ear should be easily equalized (cleared) for the avoidance of barotrauma (damage from pressure). Surgical procedures on the middle and inner ear should not have caused significant problem with balance or hearing as to pose an increased risk underwater. There is a difference of opinion as to whether or not persons with some middle and inner ear surgery should return to diving at all.

The best things that a diver can do after ear surgery are to follow the advice of a diving oriented physician and be sure that the equalizing process is easy and complete. "

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-Hyperbaric Oxygenation-

There is an interesting socio-economic-political question on our forum, 'Scuba Clinic' .

Robert Hartsoe poses questions about treatment of Neurological injuries with HBOT.
His question and my answer can be seen at this thread: http://snipurl.com/83wr
This would be a good place to post your thoughts and vent your frustrations about theHBO treatment of non-covered conditions.

Who will make a piscine hyperbaric chamber? (a decompression tale)

Canadian researchers say they now have strong evidence to suggest that fish like you, my stupid worm-eating friend, could develop decompression illness, aka the bends, in the same way that human divers.
http://tinyurl.com/5pa26

An entry on our dive accident facilities web page for Florida, changed.
Deerfield Beach

South Florida Center for H.O.P.E.
1898 H West Hillsboro Blvd
Deerfield Beach, Florida 33442
Hyperbaric Facility

Members of DAN
Treating diving accidents that are neurologically stable and not compromised.
We also treat wounds and neuro patients
Nathan Carpenter MD (Medical Director)

Hope Fine RRT, CHT (Clinic Director)

Accepting Medicare and Insurance Coverage when applicable (please contact our insurance consultant for more information regarding available coverage)

954-571-9392
Fax# 954-571-6788
hbotx@bellsouth.net

www.sfcenterforhope.com

Page on New Zealand Dive Accident Facilities has been updated to include the following:

Christchurch Hyperbaric Medicine Unit
Private Bag 4710, Christchurch
New Zealand
Phone: 64 03 3640 045, Fax: 64 03 3640 187
Email: hbu@chhlth.govt.nz

Royal New Zealand Navy
Slark Hyperbaric Unit
Naval Hospital
91 Calliope Road
Devonport New Zealand

Tel: +64 9 445 5998
Fax: +64 9 445 5920
Professor Des Gorman, PhD
Dr Chris Sames

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-*Question of the Week*-

- History of Spontaneous Pneumothorax, wants to take lessons

Hello
I am a pulmonary physician and I have recently seen a patient that had a very small spontaneous pneumothorax about 3 years ago. She is now 19 years old and wants to take scuba diving lessons. She has had no recurrence of her pneumothorax and no other medical problems. She does have a history of very mild exercise induced asthma, however her lung function studies are now normal and she has had no symptoms for several years. I initially strongly advised her against taking scuba lessons. However she and her family have

re approached me with the question of " is there any way she could take scuba lessons and scuba dive?" I am being too dogmatic and are there circumstances under which she should be allowed to scuba dive?

Thanks for your help!

Hello Dr.:

I strongly recommend that your young patient not dive.

Points for her and her family to consider very seriously:

---A primary collapsed lung (spontaneous pneumothorax) usually is caused by underlying cystic lung disease.

---There is a recurrence rate of 33 to 50 percent.

---A secondary collapsed lung is caused by many diseases affecting the lung (e.g., asthma, scleroderma, tuberous sclerosis). The most common underlying cause is chronic obstructive pulmonary disease (pulmonary emphysema).

---The air space around a collapsed lung occurring under water will increase in size on ascent, causing a tension pneumothorax requiring venting with a chest tube.

As you know, pleurodesis and pleurectomy are commonly performed for recurrent collapsed lungs. There is a recurrence rate of 8 percent following pleurodesis. Recurrence is rare following pleurectomy. Even if recurrence of collapsed lung does not occur, the underlying cystic lung disease of the other lung remains, with the inherent danger now being pulmonary barotrauma with arterial air embolism.

The following are absolute contraindications to diving:

Diving within three months after any type of collapsed lung.

Spontaneous collapsed lung in beginners.

Expert divers with recurrent collapsed lung after pleurectomy.

Relative contraindications to diving include:

Diving after three months since a collapsed lung (three years in case of spontaneous collapsed lung in previous divers).

Divers with normal pulmonary function. (Best tests for picking up blebs are spiral CT scan and helium loop.)

*From material written by Maurizio Schiavon, MD

Encourage your young patient to take up snorkeling so that she can enjoy the reef and seeing fish. If something happens, at least she'll be on the surface and won't drown or have gas embolism.

Other thoughts on this question are welcome!

Links

Pneumothorax

Pneumothorax [**Spontaneous**, traumatic, iatrogenic, post-surgical]. **...** Once a person has a **spontaneous pneumothorax**, recurrences are likely. **...**

Pulmonary Problems, Marfan's and Scuba Diving

... Pulmonary abnormalities occur in approximately 10% of patients, the commonest being **spontaneous pneumothorax** and emphysema. The **...**

Reducing the Risk of Pulmonary Barotrauma

Lists diseases that cause **spontaneous pneumothorax**, ways to avoid barotrauma to the lungs and lists som references and abstracts about spiral CT scans. **...**

Web Links to Pulmonary barotrauma **...** Lists diseases that cause **spontaneous pneumothorax**, ways to avoid barotrauma to the lungs and lists som references and abstracts about spiral CT scans. **...**

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-Mailbox Potpourri-

Question re loss of consciousness with dives and great answer by our consultant, Dr. Martin Quigley. If you have any other suggestions, please get in touch.

Dear Dr. Quigley,

My daughter has just recently completed her OWSI course and is proud to follow in her fathers footsteps and has now commenced teaching with a 5* centre in Turkey. Unfortunately, on two occasions she has become unconscious immediately post dive and on a third occasion managed to maintain consciousness at the surface with concentration. She has ceased all diving, pending medical advice.

Her dives have all been between 5 and 9 metres and she is a very fit 20 year old non smoker/drinker. She is obviously worried that her dream career will cease before it starts. Could you please offer some advice.

Thank you so very much.

"Answers to questions are offered as information only and not as medical diagnosis or advice and should always be used in conjunction with advice from your personal diving physician. Given our inability to examine you and without the findings of your doctors it's impossible to offer a personal answer that's entirely accurate."

Dear ----,

You and your daughter are very right to be concerned. As both of you no doubt know, loss of consciousness underwater generally results in drowning and death. Your daughter should not dive (not even in confined water) until a diagnosis is made.

I am assuming that your daughter has had well in excess of 100 dives before this, and never had similar symptoms.

The only dive-related condition I can come up with would be contaminated air (e.g. with carbon monoxide), but if that were the case, I would have expected that others would have similarly been affected.

The most obvious medical explanations for loss of consciousness would be metabolic (e.g. diabetes), cardiac (heart rhythm disorder); or neurological. Your daughter should start with a complete physical exam by an internal medicine specialist with particular screening for diabetes.

Then she should be seen by a cardiologist and probably have a 24-hour monitoring of her heart rhythms. Finally she should be seen by a neurologist and have a CT-scan and/or MRI of the brain as well as an EEG. Hopefully one of these studies will reveal a treatable explanation.

I am forwarding a copy of your letter to Dr. Ernest Campbell who moderates www.scuba-doc.com. He may forward your letter to some of his other consultants to see if they have any additional ideas.

Please let me know how her work-up goes – and good luck!

Martin M. Quigley, MD, FACOG
MSDT 91689
Writer's Credentials: Board Certified in Obstetrics and Gynecology and Reproductive Endocrinology. Trained in Diving and Hyperbaric Medicine by NOAA and UHMS. Current PADI Instructor. Certified Cave and Trimix Diver. Faculty Member at DAN's 2001 and 2005 Dive Medicine Courses.

Marine Tuberculosis?

Question:
I have a skin condition that started fourteen years ago I get red lumps that turn into blisters and then get infected and can take up to a month
to heal someone has suggested it may be marine tuberculosis. I have sought every avenue of treatment and no one can give it a name The blisters started on my feet and over the years have spread to my toes arms hands legs ears and two years ago I started getting them on my face

I would like to know if this sounds like marine tuberculosis

Answers:
Thanks for your question - which is impossible to answer from afar - as most questions about skin problems require visual aids.

I have referred your letter to one of our dermatologists and we might possibly hear something soon.

There is some information about human marine TB at this site:
http://www.aquatouch.com/Granuloma.htm .

Here is the response to your query from our dermatologist:, Bruce Miller, MD:

"Believe it or not there is a form of marine TB called mycobacterium marinum aka swimming pool granuloma. It usually results from a scrape or cut on the hand from cleaning a fish tank or in a pool. It presents as indurated papules and /or nodules, not blisters. Treatment is with

minocycline. You can demonstrate AFB on histo some of the time and usually can culture it. She clearly does not have this entity, but rather presents as a blistering dermatosis. The differential is rather long and includes such rare and interesting derm conditions as the many varieties of pemphigus and pemphigoid and dermatitis herpetiformis. She needs to see a smart derm and get it biopsied and sent in for standard H&E as well as immunoflourescence."

Best regards:

scubadoc

Links to Marine Infections

Marine Infections

... Marine infections can lead to cellulitis (redness and swelling), erysipelas (red streaks from **infection** in the lymph channels) and necrotizing soft tissue **...**

[PDF] **Marine Infections**

... Music || || Bookstore || Newsletter || Contact Sources || Email || Translate || Home DIVING MEDICINE ONLINE **Marine** Wound **Infections Marine infections** can lead **...**

About Lightning and Diving

An interesting account of a close lightning strike while underwater.

On Friday the 23rd of July I became officially certified for Open Water. But while on our last set of dives as me and my instructor were below the surface, we had a pop up shower with no warning or really anything looking suspicious... During that dive my instructor and I as well as our third party member felt a severe jolt under the water... It wasn't enough to hurt or cause damage, but I can tell you it makes you lose your breath real quickly. By your article I read on the internet "Lightning and the Diver", I realized that if we had been on the surface it could have been a disaster. We stayed below the surface until we reached the shore and took off our equipment under the water, before getting out and seeking shelter quickly. We thought it may be lightning but didn't know for sure until confirmation came from my husband and my sister who were watching our "bubbles" from a slightly higher elevation. They saw the storm pop up but could not contact us under the surface. They saw the lightning hit the water about 1,000 feet from our position. What we felt, I assume, was the residual charge as it dissipated. I have learned that electricity travels on surfaces. Not in the middle. None of us were hurt or had any lasting effects from the lightning, although I would not recommend that any try it. If it had been any stronger, one or all of us could have been stunned enough to lose our regulators. But after 45 minutes the storm passed and I finished up my Certification. I was excited and glad to be a part of the diving world. I don't know if this might help in future studies, but after reading you article today, I felt obligated to share my experience. Believe me, I would never want anyone to test that theory about lightning and water. We were lucky that time. If you have any suggestions that would help others that find themselves caught in that situation of "pop-up summer showers" please feel free to let us know... If there is something we can do when that happens. I appreciate you time and patience. Thank you very much.

Answer:

Many thanks for your account of your lightning strike! Glad that you were not injured. I just experienced a strike here at my house last week - traveled up my telephone and cable connections and did significant damage to my computers, phones, modems, boat lift, garage door opener, air conditioner and pump grinder - just about everything that has a fuse or circuit board was burned out.

Neighbors on each side were affected to a lesser extent.

The dilemma for divers is what to do. I suspect that the best thing would be to stay under water with a thunderhead, if you knew it was coming up. However, if you have forewarning, I'd not dive, stay in the center of the boat and make myself as small as possible.

Links

Lightning and Diving
... Lightning and the Diver. **...** NOAA has this to say about **lightning** and water:
-Get out of the water, it's a great conductor of electricity. **...**

[PDF] **Lightning** and Diving
... Websearch || Medline || Bookstore || Conferences || Email Us || Contact Us || Glossary
|| Medical Center || Dictionary || Translate || Links **Lightning** and the **...**

Lightning Safety from NOAA

http://www.wrh.noaa.gov/lasvegas/LightningSafety.htm

NASD: Boating-**Lightning** Protection **...** Discontinue fishing, water skiing, **scuba** diving, swimming or other water activities when there is **lightning** or even when weather conditions look threatening. **...**

Chest tubes as an infant - diving as an adult?

Inquiry from a NOAA trained physician:

My fiancee was born premature at 34 weeks. She had bilateral chest tubes; we're not sure what the primary indication was for their placement.
Certainly there are few data regarding diving in this instance; do you know of any anecdotal experience?

Further, if one could consider permitting her to dive, what work up would you recommend? (CXR/CT?)

Thanks for your time; your website is phenomenal, I refer patients here often.

Hello Dr.:

Interesting question! One would think that chest tubes as an infant would leave very little scarring, if any. She would have had some kind of

symptomatology over the years that would leave you to suspect pleural adhesions, such as pain with coughing or deep breathing.

However, to be on the safe side, minimum workup should include a spiral CT scan and possibly helium loop studies. If significant blebs, scarring or air trapping can be identified, she should not dive.

Thank you for the kind words about my web site. You are welcome to participate in all of the services.

Further information concerning this inquiry is welcome!

Varicose veins and diving

Hello,

I was recommended to your site by my dive club in London. I am interested to find more information about Varicose Veins. I was diagnosed last year with it and offered to have operation now in September 2004! I am looking for a way to get second opinion from doctor with dive diseases in experience, as my problem with veins is actually from diving accident! I strained my ankle when I finished dive from 40m. I have done proper decompression stops, but that injury started developing varicose veins through years.

My operation is now in September and I am keen to keep on diving after this. Before operation I am gathering all information's and would like to ask yo

- Are there any complications that can evolve after operation?
- Would it be possible to be examined by one of your doctors?
- What is the fee for that?

I would appreciate any response regarding this matter,

Answer:

It has never been shown that diving will cause or worsen varicose veins. Varicose veins can be caused by leg injuries - but an ankle strain is rarely enough trauma to initiate the process. Varicose veins are most often inherited. However, prolonged inactivity from a fracture, casting or other non-diving trauma occurring while diving or with entry or exit can lead to dep vein thrombosis and subsequent varicosities.

Surgical extirpation of the dilated veins and their abnormal valves is usually highly successful in

the hands of a competent surgeon. Diving or not diving should not enter into the equation. Once you have healed from your surgery, as ascertained by your surgeon, you may scuba dive without fear of untoward outcomes.

Our service is for information only - examinations and other services are not provided. Your surgeon should answer all your questions about your operative procedure and possible complications. There is no fee for our information services.

Helpful Links

Hematology and Diving
Home > Hematology and Diving. Diving Medicine Online Comprehensive information about diving and undersea medicine for the non-medical **...**

Anticoagulants and Coumadin
... As you are probably aware, Coumadin (Warfarin) is a vital part of the treatment of **deep vein thrombosis** and several other conditions due to it's anticoagulant **...**

[PDF] Anticoagulants and CoumadinFile Format: PDF/Adobe Acrobat
... treatment of **deep vein** http://www.gulftel.com/~scubadoc/antcoag.htm (4 of 6) [2/1/2002 1:28:08 PM] Page 5. Anticoagulants and Coumadin **thrombosis** and several **...**

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- *Interesting Links* -

DAN Announces new directors
http://snipurl.com/83uo

In competition with himself

Francisco “Pipin” Ferreras is so revered in the world of scuba- and free diving, he is regarded almost as a demi-god. This man has smashed so many records for diving without an oxygen tank and any other apparatus that he is in a league of his own. Pipin has logged more than 500 dives

surpassing the psychological and physiological human barrier of 100m.

http://snipurl.com/83a3

Anti-fatigue Pod

... a fatigue-treatment device which will be marketed to gyms and beauty salons, and like a hyperbaric chamber uses a high-pressure pod to raise oxygen levels. Oxygen toxicity, anyone?

http://tinyurl.com/4g2gq

Invasion of the Lionfish

A popular aquarium fish prized for its brilliant colors, the venomous lionfish native to Indo-Pacific waters has established itself off the southeast coast of the United States. Lionfish were introduced just four years ago by releases from aquariums, scientists believe, but the invasive fish already are changing the ecological balance of U.S. coastal waters.

http://snipurl.com/83ud

Poop in the Water

Monitoring pollution along our shoreline playgrounds
http://tinyurl.com/6gqwx

Diving in Polluted Water
http://www.scuba-doc.com/polwater.html

Embolism bubble adhesion force in excised perfused microvessels.

http://snipurl.com/803l

High-frequency sound field and bubble formation in a rat decompression model.

Ultrasound Med Biol. 2002 May;28(5):655-60.
Shupak A, Arieli Y, Bitterman H, Brod V, Arieli R, Rosenhause G

http://tinyurl.com/4cj3a

Interesting Links from Larry "Harris" Taylor

Divers,

This month, I added an article (with photos and x-rays) on a diver's foot injury (fractured toe) as a result of a falling scuba cylinder
http://www.mindspring.com/~divegeek/toe.htm

and two new war stories

my first bout of cold water nitrogen narcosis http://home.earthlink.net/~divegeeked/stalked.htm
a skin rash consult at a local quarry http://home.earthlink.net/~divegeeked/rash.htm

and finally finished converting the html versions of my articles to pdf for the Michigan Mafia Archive at
http://www.oseh.umich.edu//diving_articles.html
This month's new additions or re-directs to my list of links at http://www-personal.umich.edu/~lpt/links.htm

Scuba

Diving Frontiers: http://www.divingfrontiers.com.au/
If You Dive: http://www.ifyoudive.com/
Links-Jeff's: http://www.saudidiving.com/links.htm
WI Scuba: http://www.wiscuba.com/yabbse/index.php
World Diving Zone: http://www.worlddivingzone.com/
Scuba Diving For Free: http://www.scubadiving4free.com/

Cave Diver Database: http://cave.lawo.de/jbohnert/address
Cave Diving (Bohnert): http://cave.lawo.de/jbohnert/diving.htm
Farrworld: http://www.farrworld.co.uk/
Benthos: http://www.benthos.com/
C & C Technologies: http://www.cctechnol.com/

Bent DIver: http://www.bentdiver.com/bentdiver/index.html

Mixed-gas diving.-1926.1086:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10856
Scientific Diving Manual (UA): http://www.sfos.uaf.edu/dive/manual/contents.html
NURC-NA&GL: http://www.nurc.uconn.edu/index.htm
Scientific Diving (UA): http://www.sfos.uaf.edu/dive/

Shark Foundation: http://www.shark.ch/

Deep Ocean Diving: http://www.deepocean.net/deepocean/index.html

Dive to the SS Tahoe: http://www.diverssupport.com/sstahoe.htm

California Swell Model: http://cdip.ucsd.edu/models/cc.wave.model.shtml
NOAA-National Data Buoy Center: http://seaboard.ndbc.noaa.gov/
NOAA-Ocean Surface Current Analyses: http://www.oscar.noaa.gov/
Oceans Alive: http://www.mos.org/oceans/planet/index.html
Waves: http://www.seafriends.org.nz/oceano/waves.htm

Deco Divers: http://www.geocities.com/TheTropics/Paradise/3415/index1.html

Double Blue Images: http://www.doubleblue.com/
Howard Hall : http://www.howardhall.com/
Ocean Photo (Reinhard Dirscherl): http://www.ocean-photo.com/
Oceanwide Images (Gary Bell): http://www.oceanwideimages.com.au/site.html
Sergio Sarta: http://www.sergiosarta.com/

Learner's Guide: http://www.iantd.com/rebreather/lgrb.html
Rebreathers Worldwide: http://www.therebreathersite.nl/
U-boat Net: http://uboat.net/

Dive Film: http://www.divefilm.com/

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-Meetings, Courses and Conferences-

The latest news in this area 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 .

Medical Seminars, Inc. has updated their destinations web page at http://www.medsem.com/destination_information.html .Informationis available for the Little Cayman trip in November and the Bonaire trip in February 2005.
---First class tour direction
---First class CME diving medical courses
---World class diving

The UHMS has made changes in their web page concerning Courses.

http://www.uhms.org/Courses/Courses.htm

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-Cool Scuba Tip Of The Week!-

Can Epipens be used underwater?

David Gaede, a experienced Divemaster, asks this simple but interesting and difficult to answer question. Without any real data, we tried to answer the question and sent it around to several of our experts for comment. There's more to it than meets the eye!

Interesting question! At first glance, it would appear to be simple to answer - but on careful consideration, the EpiPen should definitely not be
used underwater for several reasons:

1. Since the use of the EpiPen is for the emergency treatment of anaphylactic shock from an allergen such as jellyfish or other sting in an
extremely hostile environment, the primary concern is to get the diver to the surface as quickly and safely as possible without wasting time. Delay

would certainly occur even in the hands of an expert in the use of the Epipen - and the specter of near drowning always is present.

2. One cannot be at all certain that the diagnosis of anaphylaxis is correct - as there are a number of other things that can happen to a diver
that would mimic a severe allergic reaction. Administration of epinephrine might be contraindicated.

3. It is not at all certain that the EpiPen would function properly under the effects of depth/pressure. It has not been tested under pressure and the
company that distributes the product [Dey Labs, Napa, California] states that it should not be used underwater. A phone call to Eric Gross, Pharm.D. at Dey Labs confirms that the product has not been tested under pressure.

4. After expediting the diver with anaphylaxis to the surface, the Epipen can be administered immediately through the wetsuit while other
resuscitation and transport actions are taken.

This does not answer the corollary to the problem - can the EpiPen be safely used in the hyperbaric environment of the dry chamber. Again, apparently no testing has been done. I plan to send your query to several of our consultants for opinion.

Martin Quigley, MD has the following comment:
"From what I can see, the "autoinjector" is a spring-loaded plunger. Assuming that the plastic case didn't crack under the hyperbaric pressure, I
think it would work in the chamber. Certainly would be simple to test. I'm sure the manufacturer would donate a few to DAN to try out.

By the way, the needle doesn't look very long, so I'm not sure it would work through a 5mm or 7mm wetsuit.

[Good point! I have looked all over for a description of the needle but am unsuccessful. However, they stress that it should only be given IM and in
the anterolateral thigh. It would have to be long enough to get through the subcutaneous fat. ESC]

Dr. Richard Moon has the following to say:
"I agree with your comments. Another issue with regard to underwater use is the power injection of marine microbes into a muscle. With regard to hyperbaric (or, even underwater) use, the device should still work, since it is spring loaded and does not depend on pressurized gas to power it. "

Dr. Ed Kay offered this from his extensive knowledge of Emergency Medicine:
"In reply to your comments regarding EpiPen use while diving, I have a few additional remarks.

To add to the list of reasons why a person should not use an EpiPen while diving, epinephrine as well as other CNS stimulants are potent potentiators of CNS oxygen toxicity. Administration while at depth might produce an unexpected result! This also addresses your "corollary" issue of EpiPen use in dry chamber dives. As I have supervised the use of auto injectors for many uses. Atropine in Vietnam, Imitrex for migraines and of course the EpiPen, I can tell you that each has a specific depth penetration to enter the target tissue. For Imitrex it is just below the dermis to get a subcutaneous injection. EpiPen is designed to penetrate clothing and is designed for IM use in the arterolateral thigh. While it is theoretically possible to use EpiPen through a wetsuit, I would not recommend it. The needle tip of this auto injector protrudes just far enough to get it into the muscle. A thick or perhaps double layer of neoprene rubber might be enough to cause a subcutaneous injection if the injector was not held very tightly to the body. A subcutaneous injection would drastically reduce the effectiveness of epinephrine in a true anaphylactic emergency."

My final thought is "How did they decide on the length of the needle - as the layer of fat varies markedly with each individual?"

What do you think?

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-Humor-

'New in the Box'

A guy out on the golf course takes a high speed ball right in the crotch.

Screaming in agony, he falls to the ground. As soon as he could manage, he took himself to the doctor.

He said "How bad is it doc? I'm going on my honeymoon next week and my fiance is still a virgin in every way."

The doctor told him, "Your testicles are fine, but I'll have to put your penis in a splint to let it heal and keep it straight It should be okay next week."

So he took four tongue depressors and formed a neat little 4-sided bandage, and wired it all

together, an impressive work of art.

The guy mentions none of this to his girl, marries her and goes on their honeymoon. That night in the hotel room she rips open her blouse to reveal a gorgeous set of breasts. This was the first time he saw them. She said, "You're the first, no one has ever touched these breasts.

Next she takes off her panties and says,"you're the first, no one has ever touched me here."

Barely able to contain himself, he immediately drops his pants...replies....."Look at this, it's still in the CRATE !!!

Low Carb Diet

Two Louisiana alligators were sitting at the side of the swamp. The smaller one turned to the bigger one and said, "I can't understand how you can be so much bigger 'n me. We're the same age, we was the same size as kids. . . I just don't get it."

"Well," said the big 'gator, "What you been eatin' boy?"

"Lawyers, same as you," replied the small 'gator.

"Hmm. Well, where do ya catch 'em?"

"Down at 'tother side of the swamp near the parkin' lot by Boudreaux's."

"Same here. Hmm. How do you catch 'em?"

"Well, I crawls up under one of them Lexuses and waits fer someone to unlock the door. Then I jumps out, grabs 'em on the leg, shake the crap out of 'em, and eats 'em! "

"Ah! " says the big alligator, "I think I see your problem. You ain't gettin' any real nourishment. See, by the time you get done shakin' the crap out of a lawyer, there ain't nothin' left but lips and a briefcase."

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-Poetry from DrSnakebelly-

haiku 1

old divers speak of
the deep forbidden cavern
full of memory

haiku 2

like flashing liquid metal,
silversides form a wall
...a sparkling vision

haiku 3

amid the fairy basslets
i am reluctant to leave
at gauge call

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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!

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* To unsubscribe or change your address, click here Email Notify Me

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