

PERSONAL INFORMATION

Name: _____

Home Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone: _____ E-mail: _____

Departure Date: _____ / _____ / _____ Condo/Hotel: _____ Room # _____
Day Month Year

EMERGENCY CONTACT

Name (*not the person you are diving with!*) Phone Number

Relationship (*Spouse/Sibling/Parent etc.*)

CERTIFICATION DETAILS

Dive Agency: _____ (PADI, NAUI, SSI, etc.) No. of Logged Dives: _____

Level: _____ (eg. OW / ADV / DM). Card No: _____

Date of most recent dive: _____ / _____ / _____ Location: _____
Month Year

Date of Birth: _____ / _____ / _____ Age: _____ First Certified _____
Day Month Year Year

SIGNATURES

Participant Signature Date _____
Day/Month/Year

Signature of Parent or Guardian Date _____
Day/Month/Year

PAYMENT DETAILS

VISA or Master Card No. : _____ . _____ . _____ . _____

Card Holder Name _____ Security Code _____ Exp. Date. _____ / _____
Month Year

OMIT PAYMENT DETAILS IF PREVIOUSLY SUBMITTED.



GENERAL TRAINING

Please read carefully and fill in all blanks before signing.

Non-Agency Disclosure and Acknowledgment Agreement

I understand and agree that PADI Members ("Members"), including Indigo Divers S#24014 and/or any individual PADI Instructors and Divemasters associated with the program in which I am participating, are licensed to use various PADI Trademarks and to conduct PADI training, but are not agents, employees or franchisees of PADI Americas, Inc. or its parent, subsidiary and affiliated corporations ("PADI"). I further understand that Member business activities are independent, and are neither owned nor operated by PADI, and that while PADI establishes the standards for PADI diver training programs, it is not responsible for, nor does it have the right to control, the operation of the Members' business activities and the day-to-day conduct of PADI programs and supervision of divers by the Members or their associated staff. I further understand and agree on behalf of myself, my heirs and my estate that in the event of an injury or death during this activity, neither I nor my estate shall seek to hold PADI liable for the actions, inactions or negligence of Indigo Divers S#24014 and/or the instructors and divemasters associated with the activity.

Liability Release and Assumption of Risk Agreement

I, participant name, hereby affirm that I am aware that skin and scuba diving have inherent risks which may result in serious injury or death.

I understand that diving with compressed air involves certain inherent risks; including but not limited to decompression sickness, embolism or other hyperbaric/air expansion injury that require treatment in a recompression chamber. I further understand that the open water diving trips which are necessary for training and for certification may be conducted at a site that is remote, either by time or distance or both, from such a recompression chamber. I still choose to proceed with such instructional dives in spite of the possible absence of a recompression chamber in proximity to the dive site.

I understand and agree that neither my instructor(s), Meghan Dingman/Ethan Johnston, the facility through which I receive my instruction, Indigo Divers S#24014, nor PADI Americas, Inc., nor its affiliate and subsidiary corporations, nor any of their respective employees, officers, agents, contractors or assigns (hereinafter referred to as "Released Parties") may be held liable or responsible in any way for any injury, death or other damages to me, my family, estate, heirs or assigns that may occur as a result of my participation in this diving program or as a result of the negligence of any party, including the Released Parties, whether passive or active.

In consideration of being allowed to participate in this course (and optional Adventure Dive), hereinafter referred to as "program," I hereby personally assume all risks of this program, whether foreseen or unforeseen, that may befall me while I am a participant in this program including, but not limited to, the academics, confined water and/or open water activities.

I further release, exempt and hold harmless said program and Released Parties from any claim or lawsuit by me, my family, estate, heirs or assigns, arising out of my enrollment and participation in this program including both claims arising during the program or after I receive my certification.

I also understand that skin diving and scuba diving are physically strenuous activities and that I will be exerting myself during this program, and that if I am injured as a result of heart attack, panic, hyperventilation, drowning or any other cause, that I expressly assume the risk of said injuries and that I will not hold the Released Parties responsible for the same.

I further state that I am of lawful age and legally competent to sign this liability release, or that I have acquired the written consent of my parent or guardian. I understand the terms herein are contractual and not a mere recital, and that I have signed this Agreement of my own free act and with the knowledge that I hereby agree to waive my legal rights. I further agree that if any provision of this Agreement is found to be unenforceable or invalid, that provision shall be severed from this Agreement. The remainder of this Agreement will then be construed as though the unenforceable provision had never been contained herein.

I understand and agree that I am not only giving up my right to sue the Released Parties but also any rights my heirs, assigns, or beneficiaries may have to sue the Released Parties resulting from my death. I further represent I have the authority to do so and that my heirs, assigns, or beneficiaries will be estopped from claiming otherwise because of my representations to the Released Parties.

I, participant name, BY THIS INSTRUMENT AGREE TO EXEMPT AND RELEASE MY INSTRUCTORS, Meghan Dingman/Ethan Johnston, THE FACILITY THROUGH WHICH I RECEIVE MY INSTRUCTION, Indigo Divers S#24014, AND PADI AMERICAS, INC. AND ALL RELATED ENTITIES AS DEFINED ABOVE, FROM ALL LIABILITY OR RESPONSIBILITY WHATSOEVER FOR PERSONAL INJURY, PROPERTY DAMAGE OR WRONGFUL DEATH HOWEVER CAUSED, INCLUDING BUT NOT LIMITED TO THE NEGLIGENCE OF THE RELEASED PARTIES, WHETHER PASSIVE OR ACTIVE.

I HAVE FULLY INFORMED MYSELF AND MY HEIRS OF THE CONTENTS OF THIS NON-AGENCY DISCLOSURE AND ACKNOWLEDGEMENT AGREEMENT AND LIABILITY RELEASE AND ASSUMPTION OF RISK AGREEMENT BY READING BOTH BEFORE SIGNING BELOW ON BEHALF OF MYSELF AND MY HEIRS.

Participant Signature

Date (Day/Month/Year)

Signature of Parent of Guardian (where applicable)

Date (Day/Month/Year)



STANDARD SAFE DIVING PRACTICES STATEMENT OF UNDERSTANDING

Please read carefully before signing.

This is a statement in which you are informed of the established safe diving practices for skin and scuba diving. These practices have been compiled for your review and acknowledgement and are intended to increase your comfort and safety in diving. Your signature on this statement is required as proof that you are aware of these safe diving practices. Read and discuss the statement prior to signing it. If you are a minor, this form must also be signed by a parent or guardian.

I, _____, understand that as a diver I should:
(Print Name)

1. Maintain good mental and physical fitness for diving. Avoid being under the influence of alcohol or dangerous drugs when diving. Keep proficient in diving skills, striving to increase them through continuing education and reviewing them in controlled conditions after a period of diving inactivity, and refer to my course materials to stay current and refresh myself on important information.
2. Be familiar with my dive sites. If not, obtain a formal diving orientation from a knowledgeable, local source. If diving conditions are worse than those in which I am experienced, postpone diving or select an alternate site with better conditions. Engage only in diving activities consistent with my training and experience. Do not engage in cave or technical diving unless specifically trained to do so.
3. Use complete, well-maintained, reliable equipment with which I am familiar; and inspect it for correct fit and function prior to each dive. Have a buoyancy control device, low-pressure buoyancy control inflation system, submersible pressure gauge and alternate air source and dive planning/monitoring device (dive computer, RDP/dive tables—whichever you are trained to use) when scuba diving. Deny use of my equipment to uncertified divers.
4. Listen carefully to dive briefings and directions and respect the advice of those supervising my diving activities. Recognize that additional training is recommended for participation in specialty diving activities, in other geographic areas and after periods of inactivity that exceed six months.
5. Adhere to the buddy system throughout every dive. Plan dives – including communications, procedures for reuniting in case of separation and emergency procedures – with my buddy.
6. Be proficient in dive planning (dive computer or dive table use). Make all dives no decompression dives and allow a margin of safety. Have a means to monitor depth and time underwater. Limit maximum depth to my level of training and experience. Ascend at a rate of not more than 18 metres/60 feet per minute. Be a **SAFE** diver – **S**lowly **A**scend **F**rom **E**very dive. Make a safety stop as an added precaution, usually at 5 metres/15 feet for three minutes or longer.
7. Maintain proper buoyancy. Adjust weighting at the surface for neutral buoyancy with no air in my buoyancy control device. Maintain neutral buoyancy while underwater. Be buoyant for surface swimming and resting. Have weights clear for easy removal, and establish buoyancy when in distress while diving. Carry at least one surface signaling device (such as signal tube, whistle, mirror).
8. Breathe properly for diving. Never breath-hold or skip-breathe when breathing compressed air, and avoid excessive hyperventilation when breath-hold diving. Avoid overexertion while in and underwater and dive within my limitations.
9. Use a boat, float or other surface support station, whenever feasible.
10. Know and obey local dive laws and regulations, including fish and game and dive flag laws.

I have read the above statements and have had any questions answered to my satisfaction. I understand the importance and purposes of these established practices. I recognize they are for my own safety and well-being, and that failure to adhere to them can place me in jeopardy when diving.

Participant's Signature

Date (Day/Month/Year)

Signature of Parent or Guardian (where applicable)

Date (Day/Month/Year)

BOAT TRAVEL AND SCUBA DIVING VOLUNTARY RELEASE, WAIVER, AND ASSUMPTION OF RISK

Please read carefully and fill in ALL blanks before signing.

I, _____, hereby affirm that I am a certified diver
(passenger/diver)

and that I thoroughly understand the hazards of scuba diving including those hazards occurring during boat travel to and from the dive site. I understand that these hazards include, but are not limited to, air expansion injuries, drowning, decompression sickness, slipping or falling while on board, being cut or struck by a boat while in the water, injuries occurring while getting on or off a boat, and other perils of the sea. By signing this release, I certify that I am fully aware of and expressly assume these and all other risks involved in making such a dive or dives, whether conducted as a recreational dive or part of a diving class.

I understand and agree that neither **Chris Alpers, Katie Alpers**, divemasters, crew members, boat captain, or owner of **The Cats Meow and/or the Cats Pajamas**, the vessel, nor International PADI, Inc., nor its affiliate of subsidiary corporations, nor the owners, officers, employees, agents, or assigns of the above listed individuals and/or entities (hereinafter "Released Parties") may be held liable or responsible in any way for any occurrence on this dive trip which may result in personal injury, property damage, wrongful death or other damage to me or my family, heirs, or assigns that may occur as a result of my participation in this boat trip and scuba dive(s) or as a result of the negligence of any party, including the Released Parties, whether passive or active.

I further state that I am of lawful age and legally competent to sign this liability release, or that I have obtained the written consent of my parent or guardian.

I _____, BY THIS INSTRUMENT, DO HERBY EXEMPT
(passenger/diver)

AND RELEASE ALL THE ABOVE LISTED ENTITIES AND/OR INDIVIDUALS FROM ALL LIABILITY AND RESPONSIBILITY FOR PERSONAL INJURY, PROPERTY DAMAGE OR WRONGFUL DEATH, HOWEVER CAUSED, INCLUDING, BUT NOT LIMITED TO, PRODUCT LIABILITY OR THE NEGLIGENCE OF THE RELEASED PARTIES, WHETHER PASSIVE OR ACTIVE.

I ACKNOWLEDGE THAT I HAVE READ THE FOREGOING PARAGRAPHS, FULLY UNDERSTAND THE POTENTIAL DANGERS INCIDENTAL TO ENGAGING IN THIS BOAT TRIP AND SCUBA DIVE(S), AM FULLY AWARE OF LEGAL CONSEQUENCES OF SIGNING THIS INSTRUMENT, AND THAT I UNDERSTAND AND AGREE THAT THIS DOCUMENT IS LEGALLY BINDING AND WILL PRECLUDE ME FROM RECOVERING MONETARY DAMAGES FROM THE ABOVE LISTED ENTITIES AND/OR INDIVIDUALS, WHETHER SPECIFICALLY NAMES OR NOT, FOR PERSONAL INJURY, PROPERTY DAMAGE OR WRONGFUL DEATH CAUSED BY PRODUCT LIABILITY OR THE NEGLIGENCE OF THE RELEASED PARTIES, WHETHER PASSIVE OR ACTIVE.

PRINTED NAME _____

Participant's Signature Date day/month/year

Signature of Parent or Guardian (where applicable) Date day/month/year

LIABILITY RELEASE AND ASSUMPTION OF RISK FOR SUPERVISION OF CERTIFIED DIVERS

PLEASE READ CAREFULLY BEFORE SIGNING.

THIS IS A RELEASE OF YOUR RIGHTS TO SUE **Executive Divers Ltd. , Indigo Divers, Chris Alpers and/or Katie Alpers**
Facility Operator Dive Supervisor
AND THEIR EMPLOYEES, AGENTS, AND ASSIGNS (HEREIN AFTER "RELEASED PARTIES") FOR PERSONAL INJURIES
OR WRONGFUL DEATH THAT MAY OCCUR DURING DIVE ACTIVITIES AS A RESULT OF THE INHERENT RISKS
ASSOCIATED WITH SCUBA DIVING OR AS A RESULT OF THE NEGLIGENCE OF THE RELEASED PARTIES .

1. I acknowledge that I am a certified scuba diver trained in safe diving practices.
2. I am aware of the risks inherent in this sport and accept these risks.
3. I am in good mental and physical fitness for diving, and I am not under the influence of alcohol, nor am I under the influence of any drugs that are contra-indicatory to diving. If I am taking medication, I affirm that I have seen a physician and have approval to dive while under the influence of the medication/drugs.
4. I am aware of the dangers of breath holding while scuba diving, and I will not hold the Released Parties and related entities (such as employees, instructors, certified assistants, boat operators, or diver training agencies) responsible if I am injured doing so.
5. I am aware that I will be diving with a buddy, and it will be our responsibility to plan our dive allowing for our diving limitations and the prevailing water conditions. I will not hold the Released Parties responsible for my failure to safely plan my dive.
6. I will inspect all of my equipment prior to the activity and will notify the Released Parties if any of my equipment is not working properly. I will not hold the Released Parties responsible for my failure to inspect my equipment prior to diving.
7. I acknowledge that I am physically fit to scuba dive, and I will not hold the Released Parties responsible if I am injured as a result of heart, lung, ear, or circulatory problems or other illnesses that occur while diving.
8. I understand that even though I follow all of the appropriate dive practices, there is still some risk of my sustaining decompression sickness, embolism or other hyperbaric injuries, and I expressly assume the risk of said injuries.
9. I expressly assume the risk and accept all responsibility to plan my dive and my dive plan.
10. I understand that scuba diving is a physically strenuous activity and that I will be exerting myself during this diving excursion, and that if I am injured as a result of a heart attack, panic, hyperventilation, etc., that I expressly assume the risk of said injuries and that I will not hold Released Parties responsible for the same.
11. I understand that on this open-water diving trip, I will be at a remote site and that there will not be immediate medical care or hyperbaric care available to me, and I expressly assume the risk of diving in such a remote spot.

12. IT IS THE INTENTION OF _____, BY THIS INSTRUMENT TO EXEMPT

Diver's Name

AND RELEASE **Executive Divers Ltd. , Indigo Divers , Chris Alpers and/or Katie Alpers**

Facility Operator Dive Supervisor

AND ALL RELATED ENTITIES AS DEFINED ABOVE FROM ALL LIABILITY WHATSOEVER FOR PERSONAL INJURY, PROPERTY DAMAGE, WRONGFUL DEATH HOWEVER CAUSED, INCLUDING, BUT NOT LIMITED TO, THE NEGLIGENCE OF THE RELEASED PARTIES.

I HAVE FULLY INFORMED MYSELF OF THE CONTENTS OF THIS ASSUMPTION OF RISK AND RELEASE BY READING IT BEFORE I SIGNED IT ON BEHALF OF MYSELF AND MY HEIRS.

Signature of Diver

Date day/month/year

Signature of Parent or Guardian (Where Applicable)

Date day/month/year

At Indigo Divers, we believe in the health & safety of all our divers.

Divers don't need to be Olympic athletes, but they do need a reasonable degree of aerobic fitness, physical stamina, and mobility. Stress and exertion are hazards that must be considered when evaluating health and fitness to dive. We therefore advise all divers over age 40 to visit a cardiologist to undergo risk assessment and exercise testing for coronary heart disease. Stressful underwater situations can get the heart beating faster than normal – with fatal results. Cardiac arrhythmia can worsen during dives and cause heart attacks. Divers with weight & heart issues have a higher mortality risk than that of a decades-older diver who is physically fit. Despite the feeling of weightlessness in water, diving is a very physical sport, and divers need to prep themselves physically for it. Aerobic conditioning is needed for leg kicks, and upper-body strength is required to pull oneself out of the water.

While there's a broad consensus about the criteria for diving fitness, it's essential that both the diver and his physician understand the risks.

Divers with high BMIs are more prone to coronary heart disease and coronary events underwater. A BMI above 30 is considered excessively risky for diving. While body fat is a great insulator, that advantage is outweighed by the higher demands made on an obese person's cardiovascular and pulmonary systems while swimming. Fatty tissue absorbs nitrogen at a rate five times faster than muscle does. Blood supply to fatty tissue is poor, causing a slow release of nitrogen and a greater risk of DCS. Combined with the greater effort needed for breathing, the heavy workload of a diver with a high BMI increases use of oxygen and production of carbon dioxide.

Dive computers are programmed with dive tables for the average-sized person and do not take divers with a high bmi into consideration, which increases their DCS risk. Poor physical conditioning impairs divers' abilities to do self rescues, perform buddy duties, and be rescued by their buddies, who may find it hard to physically pull them out of the water. Therefore, physically unfit buddies can't always be relied upon to come to the rescue in times of need.

Poorly conditioned divers should also take a more sensible approach to diving. Slower ascent rates, reduced bottom time and fewer dives in 24 hours can lessen the DCS risk.

The best method for better diving is improved cardiovascular fitness and a healthier lifestyle.

For a recommended Diving Medical Specialist in your area, please contact DAN (Divers Alert Network) tel. **919-684-2948** (Monday–Friday, 9 a.m.–5 p.m. Eastern).

Click here to email: <http://www.diversalertnetwork.org/myaccount/mscc/emailmedic.asp>

Dive Clearance Physicals are offered by the following local physician:

Dr Denise Osterloh MB ChB
CAYMAN CLINIC
439 Crewe Road, George Town
Grand Cayman,
Cayman Islands.

tel. **345 949 7400** or **345 949 4234**
drosterloh@caymanclinic.ky



MEDICAL STATEMENT
Participant Record (Confidential Information)

Please read carefully before signing.

This is a statement in which you are informed of some potential risks involved in scuba diving and of the conduct required of you during the scuba training program.

by Meghan Dingman/Ethan Johnston and
INDIGO DIVERS #S24014
located in the
Facility
CAYMAN
city of GRAND CAYMAN, state/province of ISLANDS

Read this statement prior to signing it. You must complete this Medical Statement, which includes the medical questionnaire section, to enroll in the scuba training program.

Diving is an exciting and demanding activity. When performed correctly, applying correct techniques, it is relatively safe.

established safety procedures are not followed, however, there are increased risks.

To scuba dive safely, you should not be extremely overweight or out of condition. Diving can be strenuous under certain conditions. Your respiratory and circulatory systems must be in good health.

If you have any additional questions regarding this Medical Statement or the Medical Questionnaire section, review them with your instructor before signing.

Divers Medical Questionnaire
To the Participant:

The purpose of this Medical Questionnaire is to find out if you should be examined by your doctor before participating in recreational diver training.

Please answer the following questions on your past or present medical history with a YES or NO. If you are not sure, answer YES.

- Could you be pregnant, or are you attempting to become pregnant?
Are you presently taking prescription medications?
Are you over 45 years of age and can answer YES to one or more of the following?
Have you ever had or do you currently have...
Asthma, or wheezing with breathing, or wheezing with exercise?
Frequent or severe attacks of hayfever or allergy?
Frequent colds, sinusitis or bronchitis?
Any form of lung disease?
Pneumothorax (collapsed lung)?
Other chest disease or chest surgery?
Behavioral health, mental or psychological problems (Panic attack, fear of closed or open spaces)?
Epilepsy, seizures, convulsions or take medications to prevent them?
Recurring complicated migraine headaches or take medications to prevent them?
Blackouts or fainting (full/partial loss of consciousness)?
Frequent or severe suffering from motion sickness (seasick, carsick, etc.)?

- Dysentery or dehydration requiring medical intervention?
Any dive accidents or decompression sickness?
Inability to perform moderate exercise (example: walk 1.6 km/one mile within 12 mins.)?
Head injury with loss of consciousness in the past five years?
Recurrent back problems?
Back or spinal surgery?
Diabetes?
Back, arm or leg problems following surgery, injury or fracture?
High blood pressure or take medicine to control blood pressure?
Heart disease?
Heart attack?
Angina, heart surgery or blood vessel surgery?
Sinus surgery?
Ear disease or surgery, hearing loss or problems with balance?
Recurrent ear problems?
Bleeding or other blood disorders?
Hernia?
Ulcers or ulcer surgery?
A colostomy or ileostomy?
Recreational drug use or treatment for, or alcoholism in the past five years?

The information I have provided about my medical history is accurate to the best of my knowledge. I agree to accept responsibility for omissions regarding my failure to disclose any existing or past health condition.

Signature Date Signature of Parent or Guardian Date

STUDENT

Please print legibly.

Name _____ Birth Date _____ Age _____
First Initial Last Day/Month/Year

Mailing Address _____

City _____ State/Province/Region _____

Country _____ Zip/Postal Code _____

Home Phone () _____ Business Phone () _____

Email _____ FAX _____

Name and address of your family physician

Physician _____ Clinic/Hospital _____

Address _____

Date of last physical examination _____

Name of examiner _____ Clinic/Hospital _____

Address _____

Phone () _____ Email _____

Were you ever required to have a physical for diving? Yes No If so, when? _____

PHYSICIAN

This person applying for training or is presently certified to engage in scuba (self-contained underwater breathing apparatus) diving. Your opinion of the applicant's medical fitness for scuba diving is requested. There are guidelines attached for your information and reference.

Physician's Impression

I find no medical conditions that I consider incompatible with diving.

I am unable to recommend this individual for diving.

Remarks _____

Physician's Signature or Legal Representative of Medical Practitioner Date _____
Day/Month/Year

Physician _____ Clinic/Hospital _____

Address _____

Phone () _____ Email _____

Guidelines for Recreational Scuba Diver's Physical Examination

Instructions to the Physician:

Recreational **SCUBA** (Self-Contained Underwater Breathing Apparatus) can provide recreational divers with an enjoyable sport safer than many other activities. The risk of diving is increased by certain physical conditions, which the relationship to diving may not be readily obvious. Thus, it is important to screen divers for such conditions.

The **RECREATIONAL SCUBA DIVER'S PHYSICAL EXAMINATION** focuses on conditions that may put a diver at increased risk for decompression sickness, pulmonary overinflation syndrome with subsequent arterial gas embolization and other conditions such as loss of consciousness, which could lead to drowning. Additionally, the diver must be able to withstand some degree of cold stress, the physiological effects of immersion and the optical effects of water and have sufficient physical and mental reserves to deal with possible emergencies.

The history, review of systems and physical examination should include as a minimum the points listed below. The list of conditions that might adversely affect the diver is not all-inclusive, but contains the most commonly encountered medical problems. The brief introductions should serve as an alert to the nature of the risk posed by each medical problem.

The potential diver and his or her physician must weigh the pleasures to be had by diving against an increased risk of death or injury due to the individual's medical condition. As with any recreational activity, there are no data for diving enabling the calculation of an accurate mathematical probability of injury. Experience and physiological principles only permit a qualitative assessment of relative risk.

For the purposes of this document, **Severe Risk** implies that an individual is believed to be at substantially elevated risk of decompression sickness, pulmonary or otic barotrauma or altered consciousness with subsequent drowning, compared with the general population. The consultants involved in drafting this document would generally discourage a student with such medical problems from diving. **Relative Risk** refers to a moderate increase in risk, which in some instances may be acceptable. To make a decision as to whether diving is contraindicated for this category of medical problems, physicians must base their judgement on an assessment of the individual patient. Some medical problems which may preclude diving are **temporary** in nature or responsive to treatment, allowing the student to dive safely after they have resolved.

Diagnostic studies and specialty consultations should be obtained as indicated to determine the diver's status. A list of references is included to aid in clarifying issues that arise. Physicians and other medical professionals of the Divers Alert Network (DAN) associated with Duke University Health System are available for consultation by phone +1 919 684 2948 during normal business hours. For emergency calls, 24 hours 7 days a week, call +1 919 684 8111 or +1 919 684 4DAN (collect). Related organizations exist in other parts of the world – DAN Europe in Italy +39 039 605 7858, DAN S.E.A.P. in Australia +61 3 9886 9166 and Divers Emergency Service (DES) in Australia +61 8 8212 9242, DAN Japan +81 33590 6501 and DAN Southern Africa +27 11 242 0380. There are also a number of informative websites offering similar advice.

NEUROLOGICAL

Neurological abnormalities affecting a diver's ability to perform exercise should be assessed according to the degree of compromise. Some diving physicians feel that conditions in which there can be a waxing and waning of neurological symptoms and signs, such as migraine or demyelinating disease, contraindicate diving because an exacerbation or attack of the preexisting disease (e.g.: a migraine with aura) may be difficult to distinguish

from neurological decompression sickness. A history of head injury resulting in unconsciousness should be evaluated for risk of seizure.

Relative Risk Conditions

- **Complicated Migraine Headaches whose symptoms or severity impair motor or cognitive function, neurologic manifestations**
- **History of Head Injury with sequelae other than seizure**
- **Herniated Nucleus Pulposus**
- **Intracranial Tumor or Aneurysm**
- **Peripheral Neuropathy**
- **Multiple Sclerosis**
- **Trigeminal Neuralgia**
- **History of spinal cord or brain injury**

Temporary Risk Condition

History of cerebral gas embolism without residual where pulmonary air trapping has been excluded and for which there is a satisfactory explanation and some reason to believe that the probability of recurrence is low.

Severe Risk Conditions

Any abnormalities where there is a significant probability of unconsciousness, hence putting the diver at increased risk of drowning. Divers with spinal cord or brain abnormalities where perfusion is impaired may be at increased risk of decompression sickness.

Some conditions are as follows:

- **History of seizures other than childhood febrile seizures**
- **History of Transient Ischemic Attack (TIA) or Cerebrovascular Accident (CVA)**
- **History of Serious (Central Nervous System, Cerebral or Inner Ear) Decompression Sickness with residual deficits**

CARDIOVASCULAR SYSTEMS

Relative Risk Conditions

The diagnoses listed below potentially render the diver unable to meet the exertional performance requirements likely to be encountered in recreational diving. These conditions may lead the diver to experience cardiac ischemia and its consequences. Formalized stress testing is encouraged if there is any doubt regarding physical performance capability. The suggested minimum criteria for stress testing in such cases is at least 13 METS.* Failure to meet the exercise criteria would be of significant concern. Conditioning and retesting may make later qualification possible. Immersion in water causes a redistribution of blood from the periphery into the central compartment, an effect that is greatest in cold water. The marked increase in cardiac preload during immersion can precipitate pulmonary edema in patients with impaired left ventricular function or significant valvular disease. The effects of immersion can mostly be gauged by an assessment of the diver's performance while swimming on the surface. A large proportion of scuba diving deaths in North America are due to coronary artery disease. Before being approved to scuba dive, individuals older than 40 years are recommended to undergo risk assessment for coronary artery disease. Formal exercise testing may be needed to assess the risk.

* METS is a term used to describe the metabolic cost. The MET at rest is one, two METS is two times the resting level, three METS is three times the resting level, and so on. The resting energy cost (net oxygen requirement) is thus standardized. (Exercise Physiology; Clark, Prentice Hall, 1975.)

Relative Risk Conditions

- History of Coronary Artery Bypass Grafting (CABG)
- Percutaneous Balloon Angioplasty (PCTA) or Coronary Artery Disease (CAD)
- History of Myocardial Infarction
- Congestive Heart Failure
- Hypertension
- History of dysrhythmias requiring medication for suppression
- Valvular Regurgitation

Pacemakers

The pathologic process that necessitated should be addressed regarding the diver's fitness to dive. In those instances where the problem necessitating pacing does not preclude diving, will the diver be able to meet the performance criteria?

* NOTE: Pacemakers must be certified by the manufacturer as able to withstand the pressure changes involved in recreational diving.

Severe Risks

Venous emboli, commonly produced during decompression, may cross major intracardiac right-to-left shunts and enter the cerebral or spinal cord circulations causing neurological decompression illness. Hypertrophic cardiomyopathy and valvular stenosis may lead to the sudden onset of unconsciousness during exercise.

PULMONARY

Any process or lesion that impedes airflow from the lungs places the diver at risk for pulmonary overinflation with alveolar rupture and the possibility of cerebral air embolization. Many interstitial diseases predispose to spontaneous pneumothorax: Asthma (reactive airway disease), Chronic Obstructive Pulmonary Disease (COPD), cystic or cavitating lung diseases may all cause air trapping. The 1996 Undersea and Hyperbaric Medical Society (UHMS) consensus on diving and asthma indicates that for the risk of pulmonary barotrauma and decompression illness to be acceptably low, the asthmatic diver should be asymptomatic and have normal spirometry before and after an exercise test. Inhalation challenge tests (e.g.: using histamine, hypertonic saline or methacholine) are not sufficiently standardized to be interpreted in the context of scuba diving.

A pneumothorax that occurs or reoccurs while diving may be catastrophic. As the diver ascends, air trapped in the cavity expands and could produce a tension pneumothorax.

In addition to the risk of pulmonary barotrauma, respiratory disease due to either structural disorders of the lung or chest wall or neuromuscular disease may impair exercise performance. Structural disorders of the chest or abdominal wall (e.g.: prune belly), or neuromuscular disorders, may impair cough, which could be life threatening if water is aspirated. Respiratory limitation due to disease is compounded by the combined effects of immersion (causing a restrictive deficit) and the increase in gas density, which increases in proportion to the ambient pressure (causing increased airway resistance). Formal exercise testing may be helpful.

Relative Risk Conditions

- History of Asthma or Reactive Airway Disease (RAD)*
- History of Exercise Induced Bronchospasm (EIB)*
- History of solid, cystic or cavitating lesion*
- Pneumothorax secondary to:
 - Thoracic Surgery
 - Trauma or Pleural Penetration*
 - Previous Overinflation Injury*

- Obesity
- History of Immersion Pulmonary Edema Restrictive Disease*
- Interstitial lung disease: May increase the risk of pneumothorax

* Spirometry should be normal before and after exercise

Active Reactive Airway Disease, Active Asthma, Exercise Induced Bronchospasm, Chronic Obstructive Pulmonary Disease or history of same with abnormal PFTs or a positive exercise challenge are concerns for diving.

Severe Risk Conditions

- History of spontaneous pneumothorax. Individuals who have experienced spontaneous pneumothorax should avoid diving, even after a surgical procedure designed to prevent recurrence (such as pleurodesis). Surgical procedures either do not correct the underlying lung abnormality (e.g.: pleurodesis, apical pleurectomy) or may not totally correct it (e.g.: resection of blebs or bullae).
- Impaired exercise performance due to respiratory disease.

GASTROINTESTINAL

Temporary Risks

As with other organ systems and disease states, a process which chronically debilitates the diver may impair exercise performance. Additionally, dive activities may take place in areas remote from medical care. The possibility of acute recurrences of disability or lethal symptoms must be considered.

Temporary Risk Conditions

- Peptic Ulcer Disease associated with pyloric obstruction or severe reflux
- Unrepaired hernias of the abdominal wall large enough to contain bowel within the hernia sac could incarcerate.

Relative Risk Conditions

- Inflammatory Bowel Disease
- Functional Bowel Disorders

Severe Risks

Altered anatomical relationships secondary to surgery or malformations that lead to gas trapping may cause serious problems. Gas trapped in a hollow viscous expands as the divers surfaces and can lead to rupture or, in the case of the upper GI tract, emesis. Emesis underwater may lead to drowning.

Severe Risk Conditions

- Gastric outlet obstruction of a degree sufficient to produce recurrent vomiting
- Chronic or recurrent small bowel obstruction
- Severe gastroesophageal reflux
- Achalasia
- Paraesophageal Hernia

ORTHOPAEDIC

Relative impairment of mobility, particularly in a boat or ashore with equipment weighing up to 18 kgs/40 pounds must be assessed. Orthopaedic conditions of a degree sufficient to impair exercise performance may increase the risk.

Relative Risk Conditions

- Amputation
- Scoliosis must also assess impact on respiratory function and exercise performance.
- Septic Necrosis possible risk of progression due to effects of decompression (evaluate the underlying medical

cause of decompression may accelerate/escalate the progression).

Temporary Risk Conditions

- Back pain

HEMATOLOGICAL

Abnormalities resulting in altered rheological properties may theoretically increase the risk of decompression sickness. Bleeding disorders could worsen the effects of otic or sinus barotrauma, and exacerbate the injury associated with inner ear or spinal cord decompression sickness. Spontaneous bleeding into the joints (e.g.: in hemophilia) may be difficult to distinguish from decompression illness.

Relative Risk Conditions

- Sickle Cell Disease
- Polycythemia Vera
- Leukemia
- Hemophilia/Impaired Coagulation

METABOLIC AND ENDOCRINOLOGICAL

With the exception of diabetes mellitus, states of altered hormonal or metabolic function should be assessed according to their impact on the individual's ability to tolerate the moderate exercise requirement and environmental stress of sport diving. Obesity may predispose the individual to decompression sickness, can impair exercise tolerance and is a risk factor for coronary artery disease.

Relative Risk Conditions

- Hormonal Excess or Deficiency
- Obesity
- Renal Insufficiency

Severe Risk Conditions

The potentially rapid change in level of consciousness associated with hypoglycemia in diabetics on insulin therapy or certain oral hypoglycemic medications can result in drowning. Diving is therefore generally contraindicated, unless associated with a specialized program that addresses these issues. [See "Guidelines for Recreational Diving with Diabetes" at www.wrsc.com and www.diversalertnetwork.org.]

Pregnancy: The effect of venous emboli formed during decompression on the fetus has not been thoroughly investigated. Diving is therefore not recommended during any stage of pregnancy or for women actively seeking to become pregnant.

BEHAVIORAL HEALTH

Behavioral: The diver's mental capacity and emotional make-up are important to safe diving. The student diver must have sufficient learning abilities to grasp information presented to him by his instructors, be able to safely plan and execute his own dives and react to changes around him in the underwater environment. The student's motivation to learn and his ability to deal with potentially dangerous situations are also crucial to safe scuba diving.

Relative Risk Conditions

- Developmental delay
- History of drug or alcohol abuse
- History of previous psychotic episodes
- Use of psychotropic medications

Severe Risk Conditions

- Inappropriate motivation to dive – solely to please spouse, partner or family member, to prove oneself in the face of

personal fears

- Claustrophobia and agoraphobia
- Active psychosis
- History of untreated panic disorder
- Drug or alcohol abuse

OTOLARYNGOLOGICAL

Equalisation of pressure must take place during ascent and descent between ambient water pressure and the external auditory canal, middle ear and paranasal sinuses. Failure of this to occur results at least in pain and in the worst case rupture of the occluded space with disabling and possible lethal consequences.

The inner ear is fluid filled and therefore noncompressible. The flexible interfaces between the middle and inner ear, the round and oval windows are, however, subject to pressure changes. Previously ruptured but healed round or oval window membranes are at increased risk of rupture due to failure to equalise pressure or due to marked overpressurisation during vigorous or explosive Valsalva manoeuvres.

The larynx and pharynx must be free of an obstruction to airflow. The laryngeal and epiglottic structure must function normally to prevent aspiration.

Mandibular and maxillary function must be capable of allowing the patient to hold a scuba mouthpiece. Individuals who have had mid-face fractures may be prone to barotrauma and rupture of the air filled cavities involved.

Relative Risk Conditions

- Recurrent otitis externa
- Significant obstruction of external auditory canal
- History of significant cold injury to pinna
- Eustachian tube dysfunction
- Recurrent otitis media or sinusitis
- History of TM perforation
- History of tympanoplasty
- History of mastoidectomy
- Significant conductive or sensorineural hearing impairment
- Facial nerve paralysis not associated with barotrauma
- Full prosthodontic devices
- History of mid-face fracture
- Unhealed oral surgery sites
- History of head and/or neck therapeutic radiation
- History of temporomandibular joint dysfunction
- History of round window rupture

Severe Risk Conditions

- Monomeric TM
- Open TM perforation
- Tube myringotomy
- History of stapedectomy
- History of ossicular chain surgery
- History of inner ear surgery
- Facial nerve paralysis secondary to barotrauma
- Inner ear disease other than presbycusis
- Uncorrected upper airway obstruction
- Laryngectomy or status post partial laryngectomy
- Tracheostomy
- Uncorrected laryngocele
- History of vestibular decompression sickness

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13. Divers Alert Network S.E.A.P., P. O. Box 384, Ashburton, Australia, telephone 61-3-9886-9166
14. Divers Emergency Service, Australia, www.rah.sa.gov.au/hyperbaric, telephone 61-8-8212-9242
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