

SOLDIER ON / SANS LIMITES
Nomination and Approval Form /
Formulaire de nomination et de consentement



*PROTECTED "A" PERSONAL INFORMATION WHEN COMPLETE /
 LES RENSEIGNEMENTS PERSONNELS SONT PROTÉGÉS « A » LORSQUE LE FORMULAIRE EST REMPLI*

Activity/ Activité : Western Canada SCUBA 15 – 20 Jan 2020

A. Approval and Clearance to Participate / Approbation et autorisation pour la participation

A1. Personal information of applicant / Renseignements personnels du récipient admissible :

(All fields mandatory – retired pers are to indicate their rank on release)

Full Name (as shown on government ID or passport):			
Street Address / Adresse municipale :			
City / Ville :	Province :	Postal Code / Code postal :	Telephone (preferred) / Téléphone (préféré) :
Language (preferred) / Langue (préféré) : <input type="checkbox"/> English <input type="checkbox"/> Français	Date of Birth / Date de naissance :	E-Mail (preferred) / Courriel (préféré) :	
Please select / Cocher case: <input type="checkbox"/> Serving / En service <input type="checkbox"/> Retired / Retraité	Rank / Grade: Unit / Unité:	Service/Client No / N° matricule/client :	VAC Client No / N° client ACC:
Environment (select one) / Armée (cocher une case) : Army / Armée de terre <input type="checkbox"/> Air Force / Force aérienne <input type="checkbox"/> Navy / Marine <input type="checkbox"/>			T-Shirt Size/Grandeur :
I would like to receive information, updates and other relevant information about Soldier On. / J'aimerais recevoir les nouvelles et informations du programme Sans limites.			<input type="checkbox"/> Yes/Oui <input type="checkbox"/> No/Non

A2. Additional Information / Renseignements additionnelles

The following information is voluntary and will be used to ensure member's safety and promote a positive experience (e.g. provide accessible transportation, accessible lodging and ensure proper tempo of schedule). Les informations suivantes sont volontaires et seront utilisées pour assurer la sécurité du membre et de promouvoir une expérience positive. (Ex. le transport, logement accessible et assurez une harmonie du calendrier).		
(1) There has been no change to my medical employment limitations in the past year / Il n'y a eu aucun changement à mes limitations d'emploi médicales durant l'année passée.	<input type="checkbox"/> Yes/Oui	<input type="checkbox"/> No/Non
(2) I consent to my medical employment limitations (MELs) being released to Soldier On / Je consens à mes restrictions d'emploi médicales (REM) étant libéré à Sans limites.	<input type="checkbox"/> Yes/Oui	<input type="checkbox"/> No/Non
(3) I consent to Soldier On contacting my Medical Officer for relevant medical information / Je consens à Sans limites d'être en contact avec mon médecin militaire pour de l'information médicales pertinentes.	<input type="checkbox"/> Yes/Oui	<input type="checkbox"/> No/Non
(4) Your injury includes / Votre blessure inclut : <input type="checkbox"/> Visible injuries/Blessures visible (ex. amputée/amputé, musculoskeletal/musculosquelettique) <input type="checkbox"/> Non-visible injuries/Blessures non-visible (ex. OSI/BSO, TBI/TCC)		

Activity/ Activité : Western Canada SCUBA 15 – 20 Jan 2020

Physical and mental activity requirements / Exigences d'activité physique et mentale

- a. All participants must meet medical requirements. Participants must complete attached medical questionnaire, signed by medical doctor. / Tous les participants doivent satisfaire aux exigences médicales. Les participants doivent remplir le questionnaire médical ci-joint, signé par un médecin.
- b. Participants will be joined with other ill/injured members and civilians, and therefore should be able to function in a social environment. Participants are advised that meals and accommodations for this event may be located at Canadian Armed Forces bases/facilities, and thus they may be exposed to a day-to-day military environment. Participants also acknowledge that there will be no alcohol allowed in the accommodations, and may be required to share accommodations. / Tous doivent être confortables d'interagir dans un groupe. Les participants pourraient être exposés à l'environnement militaire pendant l'activité; le logement et les repas, auront lieu sur une base des Forces canadiennes. Aucune consommation d'alcool ne sera tolérée dans les chambres des participants. Il est possible que les chambres soient partagées (2 personnes/chambre).

I, _____ (print name) hereby acknowledge having read the physical and mental requirements for the activity and by submitting this application shall attend and fully participate in the event. I understand that withdrawals will only be for medical and compassionate reasons only and must be submitted to Soldier On (via the chain of command as applicable) prior to the event. I acknowledge that I may be liable for any expenditure incurred by Soldier On for withdrawals for any other reason.

Je, _____ (nom) reconnais qu'en soumettant la demande que je comprends les exigences d'activité physiques et mentale et que je vais assister à l'événement. Avant l'événement, le retrait pour raison médical et compassion seulement sera étudié par Sans Limites (la chaîne de commandement si applicable). Je reconnais que je pourrais être tenu responsable des dépenses engagées par Sans Limites pour un retrait sans raison valable.

Participant signature/ Signature du participant

Date

Activity/ Activité : Western Canada SCUBA 15 – 20 Jan 2020

The below signatories hereby acknowledge the physical and mental requirements for the activity and give approval for the nominee to participate. / *Les signataires ci-dessous reconnaissent les exigences physiques et mentales pour l'activité et approuve le candidat à participer.*

PRINT NAME / NOM EN LETTRES MOULÉES	SIGNATURE & DATE / SIGNATURE ET DATE
RECOMMENDATION from IPSC PI Comd / Commandant de peloton CISP (Where applicable) / (le cas échéant)	Restrictions/Recommendation: Signature: Date: Print Name / Bloque signature:
RECOMMENDATION from Medical Officer (serving), Civilian Physician (retired): Did member provide consent to release MELs to Soldier On (Para A2) / Le member a-t-il consenti de libérer a Sans limites les restrictions d'emploi médicales (REM) <input type="checkbox"/> Yes/Oui <input type="checkbox"/> No/Non NOTE: CFHS electronic chit shall be attached / SSFC chit électronique peut être attaché.	I recommend / Je recommande <input type="checkbox"/> Yes/Oui <input type="checkbox"/> No/Non Comments / Commentaires: Signature: Date: Print Name / Bloque signature:
APPROVAL from Military Chain of Command / Chaîne de commandement militaire responsable de l'approbation : <i>(Retirees exempt) / (retraités exempts)</i> NOTE : For all personnel posted to an IPSC/JPSU, the Regional JPSU OC is the signing authority / Pour tous les militaires affectés à un CISP / UISP, l'Officier commandant de la région est l'autorité de signature.	I approve / J'approuve <input type="checkbox"/> Yes/Oui <input type="checkbox"/> No/Non Comments / Commentaires: Signature: Date: Print Name / Bloque signature:



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. Your signature on this statement is required for you to participate in the scuba training program. In addition, if your medical condition changes at any time during your scuba programs it is important that you inform your instructor immediately.

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. If you are a minor, you must have this Statement signed by a parent or guardian. Diving is an exciting and demanding activity. When performed correctly, applying correct techniques, it is relatively safe. When 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. All body air spaces must be normal and healthy. A person with coronary disease, a current cold or congestion, epilepsy, a severe medical problem or who is under the influence of alcohol or drugs should not dive. If you have asthma, heart disease, other chronic medical conditions or you are taking medications on a regular basis, you should consult your doctor and the instructor before participating in this program, and on a regular basis thereafter upon completion. You will also learn from the instructor the important safety rules regarding breathing and equalization while scuba diving. Improper use of scuba equipment can result in serious injury. You must be thoroughly instructed in its use under direct supervision of a qualified instructor to use it safely.

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. A positive response to a question does not necessarily disqualify you from diving. A positive response means that there is a preexisting condition that may affect your safety while diving and you must seek the advice of your physician prior to engaging in dive activities.

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

- | | | |
|--|---|--|
| <input type="checkbox"/> Could you be pregnant, or are you attempting to become pregnant? | <input type="checkbox"/> Any form of lung disease? | <input type="checkbox"/> Recurrent back problems? |
| <input type="checkbox"/> Are you presently taking prescription medications? (with the exception of birth control or anti-malarial) | <input type="checkbox"/> Pneumothorax (collapsed lung)? | <input type="checkbox"/> Back or spinal surgery? |
| <input type="checkbox"/> Are you over 45 years of age and can answer YES to one or more of the following? | <input type="checkbox"/> Other chest disease or chest surgery? | <input type="checkbox"/> Diabetes? |
| <input type="checkbox"/> currently smoke a pipe, cigars or cigarettes | <input type="checkbox"/> Behavioral health, mental or psychological problems (Panic attack, fear of closed or open spaces)? | <input type="checkbox"/> Back, arm or leg problems following surgery, injury or fracture? |
| <input type="checkbox"/> are currently receiving medical care | <input type="checkbox"/> Epilepsy, seizures, convulsions or take medications to prevent them? | <input type="checkbox"/> High blood pressure or take medicine to control blood pressure? |
| <input type="checkbox"/> have a high cholesterol level | <input type="checkbox"/> Recurring complicated migraine headaches or take medications to prevent them? | <input type="checkbox"/> Heart disease? |
| <input type="checkbox"/> high blood pressure | <input type="checkbox"/> Blackouts or fainting (full/partial loss of consciousness)? | <input type="checkbox"/> Heart attack? |
| <input type="checkbox"/> have a family history of heart attack or stroke | <input type="checkbox"/> Frequent or severe suffering from motion sickness (seasick, carsick, etc.)? | <input type="checkbox"/> Angina, heart surgery or blood vessel surgery? |
| <input type="checkbox"/> diabetes mellitus, even if controlled by diet alone | <input type="checkbox"/> Dysentery or dehydration requiring medical intervention? | <input type="checkbox"/> Sinus surgery? |
| Have you ever had or do you currently have... | <input type="checkbox"/> Any dive accidents or decompression sickness? | <input type="checkbox"/> Ear disease or surgery, hearing loss or problems with balance? |
| <input type="checkbox"/> Asthma, or wheezing with breathing, or wheezing with exercise? | <input type="checkbox"/> Inability to perform moderate exercise (example: walk 1.6 km/one mile within 12 mins.)? | <input type="checkbox"/> Recurrent ear problems? |
| <input type="checkbox"/> Frequent or severe attacks of hayfever or allergy? | <input type="checkbox"/> Head injury with loss of consciousness in the past five years? | <input type="checkbox"/> Bleeding or other blood disorders? |
| <input type="checkbox"/> Frequent colds, sinusitis or bronchitis? | | <input type="checkbox"/> Hernia? |
| | | <input type="checkbox"/> Ulcers or ulcer surgery? |
| | | <input type="checkbox"/> A colostomy or ileostomy? |
| | | <input type="checkbox"/> 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 affirm it is my responsibility to inform my instructor of any and all changes to my medical history at any time during my participation in scuba programs. I agree to accept responsibility for omissions regarding my failure to disclose any existing or past health condition, or any changes thereto.

Participant's Signature

Date (Day / Month / Year)

Signature of Parent or Guardian (where applicable)

Date (Day / Month / Year)

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. In Norway: Haukeland sykehus, Seksjon for hyperbarmedisin, tlf: +47 55 97 38 75, fax: +47 55 97 51 37. 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.

- **Aseptic 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.

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 makeup 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**

BIBLIOGRAPHY/REFERENCE

1. Bennett, P. & Elliott, D (eds.) (1993). *The Physiology and Medicine of Diving*. 4th Ed., W.B. Saunders Company Ltd., London, England.
2. Bove, A., & Davis, J. (1990). *Diving Medicine*. 2nd Edition, W.B. Saunders Company, Philadelphia, PA.
3. Davis, J., & Bove, A. (1986). "Medical Examination of Sport Scuba Divers, Medical Seminars, Inc.," San Antonio, TX
4. Dembert, M. & Keith, J. (1986). "Evaluating the Potential Pediatric Scuba Diver." *AJDC*, Vol. 140, November.
5. Edmonds, C., Lowry, C., & Pennefether, J. (1992) .3rd ed., *Diving and Subaquatic Medicine*. Butterworth & Heineman Ltd., Oxford, England.
6. Elliott, D. (Ed) (1994). "Medical Assessment of Fitness to Dive." Proceedings of an International Conference at the Edinburgh Conference Centre, Biomedical Seminars, Surry, England.
7. "Fitness to Dive," Proceedings of the 34th Underwater & Hyperbaric Medical Society Workshop (1987) UHMS Publication Number 70(WS-FD) Bethesda, MD.
8. Neuman, T. & Bove, A. (1994). "Asthma and Diving." *Ann. Allergy*, Vol. 73, October, O'Connor & Kelsen.
9. Shilling, C. & Carlston, D. & Mathias, R. (eds) (1984). *The Physician's Guide to Diving Medicine*. Plenum Press, New York, NY.
10. Undersea and Hyperbaric Medical Society (UHMS) www.UHMS.org
11. Divers Alert Network (DAN) United States, 6 West Colony Place, Durham, NC www.DiversAlertNetwork.org
12. Divers Alert Network Europe, P.O. Box 64026 Roseto, Italy, telephone non-emergency line: weekdays office hours +39-085-893- 0333, emergency line 24 hours: +39-039-605-7858
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
15. South Pacific Underwater Medicine Society (SPUMS), P.O. Box 190, Red Hill South, Victoria, Australia, www.spums.org.au
16. European Underwater and Baromedical Society, www.eubs.org

ENDORSERS

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