

Diving Medical Exam Overview for the Examining Physician

TO THE EXAMINING PHYSICIAN

This person requires a medical examination to assess fitness for participation in Scientific Diving activities at the University of Maine. Your evaluation is requested on the attached *Medical Evaluation of Fitness for Scuba Diving Report* (Appendix 2). The medical exam should be conducted in conjunction with a review of the applicant's *Diving Medical History Form* (Appendix 3).

If you have questions about diving medicine, you may wish to consult one of the *Recommended Physicians with Expertise in Diving Medicine* or *Selected References in Diving Medicine* (Appendix 4). Please contact the UMaine Diving Safety Officer if you have any questions or concerns about diving medicine or the University of Maine standards. Thank you for your assistance.

Christopher M. Rigaud, University of Maine Diving Safety Officer

Safety Management/ Scientific Diving Program
Darling Marine Center
193 Clarks Cove Road
Walpole, ME 04573
207-563-8273

CONDITIONS WHICH MAY DISQUALIFY CANDIDATES FROM DIVING

(Adapted from Bove, 1998)

Scuba and other modes of compressed-gas diving can be strenuous and hazardous. A special risk is present if the middle ear, sinuses or lung segments do not readily equalize air pressure changes. The most common cause of distress is eustachian insufficiency. Recent deaths in the scientific diving community have been attributed to cardiovascular disease. *The diver should be free of any chronic disabling disease and any conditions listed below for which restrictions from diving are generally recommended:*

1. Abnormalities of the tympanic membrane, such as perforation, presence of a monomeric membrane, or inability to autoinflate the middle ears.
2. Vertigo including Meniere's Disease.
3. Stapedectomy or middle ear reconstructive surgery.
4. Recent ocular surgery.
5. Psychiatric disorders including claustrophobia, suicidal ideation, psychosis, anxiety states, untreated depression.
6. Substance abuse, including alcohol.
7. Episodic loss of consciousness.
8. History of seizure.
9. History of stroke or a fixed neurological deficit.
10. Recurring neurological disorders, including transient ischemic attacks.
11. History of intracranial aneurysm, other vascular malformation or intracranial hemorrhage.
12. History of neurological decompression illness with residual deficit.
13. Head injury with sequelae.
14. Hematologic disorders including coagulopathies.
15. Evidence of coronary artery disease or high risk for coronary artery disease.
16. Atrial septal defects.
17. Significant valvular heart disease - isolated mitral valve prolapse is not disqualifying.
18. Significant cardiac rhythm or conduction abnormalities.
19. Implanted cardiac pacemakers and cardiac defibrillators (ICD).
20. Inadequate exercise tolerance.
21. Severe hypertension.
22. History of spontaneous or traumatic pneumothorax.
23. Asthma.
24. Chronic pulmonary disease, including radiographic evidence of pulmonary blebs, bullae or cysts.
25. Diabetes mellitus.
26. Pregnancy.

Medical Evaluation of Fitness for Scuba Diving Report

Name of Applicant:		
Date of Birth:	Date of Initial Exam:	Date of Current Exam:

To The Physician: Scientific divers require periodic medical examinations to assess their fitness to engage in diving with self-contained underwater breathing apparatus (scuba). The answers on the Diving Medical History Form may indicate potential health or safety risks as noted. Scuba diving is an activity that puts unusual stress on the individual in several ways. Your evaluation and opinion on the applicant's medical fitness is requested on this Medical Evaluation Report. Scuba diving requires heavy exertion. The diver must be free of cardiovascular and respiratory disease. An absolute requirement is the ability of the lungs, middle ears, and sinuses to equalize pressure. Any condition that risks the loss of consciousness should disqualify the applicant. If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society or Divers Alert Network.

THE FOLLOWING TESTS ARE REQUIRED:

DURING ALL INITIAL AND PERIODIC RE-EXAMS (UNDER AGE 40):

- Medical history
- Complete physical exam, with emphasis on neurological and otological components
- Urinalysis
- Any further tests deemed necessary by the physician

ADDITIONAL TESTS DURING INITIAL AND PERIODIC RE-EXAMS (OVER AGE 40):

- Chest x-ray (Required only during first exam over age 40)
- Resting EKG
- Assessment of coronary artery disease using Multiple-Risk-Factor Assessment (age, lipid profile, blood pressure, diabetic screening, smoking)
- Note: Exercise stress testing may be indicated based on Multiple-Risk-Factor Assessment

PHYSICIAN'S STATEMENT:

I have evaluated this individual according to the UMaine Diving Medical Exam Overview for the Examining Physician, the provided Medical History report, and the required tests listed above. I have discussed with the patient any medical condition(s) that would not disqualify him/her from diving but which may seriously compromise subsequent health. The patient understands the nature of the hazards and the risks involved in diving with these conditions.

<p>_____ Diver IS medically qualified to dive for: (Initials)</p> <p><input type="checkbox"/> 2 years (over age 60)</p> <p><input type="checkbox"/> 3 years (age 40-59)</p> <p><input type="checkbox"/> 5 years (under age 40)</p>	<p>_____ Diver IS NOT medically qualified to dive: (Initials)</p> <p><input type="checkbox"/> Permanently</p> <p><input type="checkbox"/> Temporarily</p>
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Physician Signature: _____, **M.D./ D.O.** Date: _____

Physician Name (Print): _____

NOTE: Although portions of this exam may be conducted by other medical professionals, final approval for diving must come from a Medical Doctor (M.D.) or Osteopath (D.O.). Signatures by Physicians Assistants (P.A.) Nurse Practitioners (N.P.), etc. will not be accepted.

PHYSICIANS INFORMATION

Name: _____

Address: _____

Phone: _____ Email/Web: _____

1) My familiarity with applicant is (check one):

- Regular Physician for _____ years
- Other (describe) _____

2) My familiarity with diving medicine is:

- With this exam only
- Other: _____

NOTE: Initial approval does not guarantee admission to the program. UMaine reserves the right to request additional screening by physicians qualified in diving and hyperbaric medicine or other associated specialties.

PHYSICIANS REMARKS

Physician Signature: _____, **M.D./ D.O.** Date: _____

Diving Medical History Form

(To Be Completed By Applicant-Diver)

Name _____ Sex ____ Wt. _____ Ht. _____ DOB: _____

TO THE APPLICANT:

Scuba diving places considerable physical and mental demands on the diver. Certain medical and physical requirements must be met before beginning a diving or training program. In many instances, your medical history is more important in determining your fitness to dive than the physical exam. Obviously you should provide accurate information or the medical screening process will be compromised.

This form will be kept confidential. If you believe any question amounts to invasion of your privacy, you may elect to omit an answer, provided that you shall subsequently discuss that matter with your own physician who must then indicate, in writing, that you have done so and that no health hazard exists.

If your answers indicate a condition which might make diving hazardous, you will be asked to review the matter with your physician. In such instances, their written authorization will be required in order for further consideration to be given to your application. If your physician concludes that diving would involve undue risk for you, remember that they are concerned only with your well-being and safety. Please respect the advice and intent of this medical history form.

Please indicate if any of the following conditions currently or have ever applied to you			
Yes	No	Cardiovascular	Comments
		Bleeding disorders	
		Heart murmur	
		Large heart	
		High blood pressure	
		Angina (heart pains or pressure in the chest)	
		Heart attack	
		Low blood pressure	
		Recurrent or persistent swelling of the legs	
		Pounding, rapid heartbeat or palpitations	
		Easily fatigued or short of breath	
		Abnormal EKG	
		Varicose veins	
Yes	No	Ears/Sinuses/Respiratory	Comments
		Motion sickness or sea/air sickness	
		Perforated ear drums	
		Hay fever	
		Frequent sinus trouble drainage from the nose, post-nasal drip, or stuffy nose	
		Frequent earaches	
		Drainage from the ears	
		Difficulty with your ears in airplanes or on mountains	
		Ear surgery	

		ringing in your ears	
		Frequent dizzy spells	
		Hearing problems	
		Trouble equalizing pressure in your ears	
		Asthma	
		Wheezing attacks	
		Cough (chronic or recurrent)	
		Frequently raise sputum	
		Pleurisy	
		Collapsed lung (pneumothorax)	
		Lung cysts	
		Pneumonia	
		Tuberculosis	
		Shortness of breath	
		Lung problem or abnormality	
		Spit blood	
		Breathing difficulty after eating particular foods, after exposure to particular pollens or animals	
		Subject to bronchitis	
Yes	No	Musculoskeletal	Comments
		Joint problems, dislocations or arthritis	
		Back trouble or back injuries	
		Ruptured or slipped disk	
		Limiting physical handicaps	
		Muscle cramps	
		Amputations	
Yes	No	Neurological/ Behavioral/ Psychological	Comments
		Convulsions, seizures, or epilepsy	
		Fainting spells or dizziness	
		Head injury causing unconsciousness	
		Paralysis	
		Headaches (frequent and severe)	
		Claustrophobia	
		Mental disorder or nervous breakdown	
		Anxiety spells or hyperventilation	
		Nervous tension or emotional problems	
		Take tranquilizers	

		Drug addiction	
		Alcoholism	
Yes	No	Reproductive	Comments
		Currently pregnant	
		Menstrual problems	
Yes	No	Other	Comments
		Diabetes	
		Major surgery	
		Presently being treated by a physician	
		Taking any medication regularly (even non-prescription)	
		Been rejected or restricted from sports	
		Wear dental plates	
		Wear glasses or contact lenses	
		Rheumatic fever	
		Scarlet fever	
		Have you ever had an adverse reaction to medication?	
		Do you smoke?	
		Have you ever had any other medical problems not listed? If so, please list or describe below.	
Yes	No	Family/ Medical History	Comments
		Is there a family history of high cholesterol?	
		Is there a family history of heart disease or stroke?	
		Is there a family history of diabetes?	
		Is there a family history of asthma?	
		Date of last tetanus shot and other vaccination records.	
Yes	No	Diving History	Comments
		Any problem related to diving	
		Subcutaneous emphysema (air under the skin)	
		Air embolism after diving	
		Decompression sickness	
Please explain any “yes” answers to the above questions.			

I certify that the above answers and information represent an accurate and complete description of my medical history.

Signature: _____

Date: _____

Recommended Physicians with Expertise in Diving Medicine

1. **Diver's Alert Network**
The Peter B. Bennett Center
6 West Colony Place
Durham, NC 27705 USA
Non-Emergency Medical Questions:
1-800-446-2671 or 1-919-684-2948
<http://www.diversalertnetwork.org>
2. **Undersea Hyperbaric and Medical Society**
21 West Colony Place, Suite 280
Durham, NC 27705
Phone: 919-490-5140/877-533-8467
<http://membership.uhms.org/>
3. **Howard Jones, M.D.**
UMaine Occupational Physician
Eastern Maine Medical Center/ UMaine Cutler Health Center
207-581-4018
4. **Michael Clark, M.D.**
80 River Road
Newcastle, ME 04553
207-563-3366
5. **Peter Goth, M.D.**
P.O. Box 203
Medomak Road
Bremen, Maine 04551
207-529-5747

Selected References in Diving Medicine

Most are available from Best Publishing Company, P.O. Box 30100, Flagstaff, AZ 86003-0100, the Divers Alert Network (DAN) or the Undersea and Hyperbaric Medical Association (UHMS), Bethesda, MD.

- Bove, A.A. 2011. The cardiovascular system and diving risk. *Undersea and Hyperbaric Medicine* 38(4): 261-269.
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- Mitchell, S.J., and A.A. Bove. 2011. Medical screening of recreational divers for cardiovascular disease: Consensus discussion at the Divers Alert Network Fatality Workshop. *Undersea and Hyperbaric Medicine* 38(4): 289-296.
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- Thompson, P.D. 2011. The cardiovascular risks of diving. *Undersea and Hyperbaric Medicine* 38(4): 271-277.
- U.S. NAVY DIVING MANUAL. Superintendent of Documents, Washington, DC: U.S. Government Printing Office, Washington, D.C.