

MEDICAL FORM FOR PROSPECTIVE RECREATIONAL SCUBA DIVERS

CANDIDATE DETAILS : *THIS SECTION TO BE COMPLETED BY CANDIDATE*

Positive responses to questions do not necessarily disqualify you from diving.

1 Surname	Other Names	2 Date of Birth
3 Address		Phone (<i>home</i>)
4 Sex	Male	Female
5 Principal Occupation		Phone (<i>work</i>)
6 Do you participate in any regular physical activity?	YES	NO
7 Description of activity		
8 Do you smoke?	YES	NO
9 Do you drink alcohol?	YES	NO
10 If yes, how many drinks per week?		
11 Are you taking any tablets, medicines or other drugs?	YES	NO
	YES	NO
	YES	NO
12 Do you have any allergies?	YES	NO
	YES	NO
13 Have you had any reactions to drugs, medicines or food?	YES	NO
	YES	NO

Have you ever had or do you have any of the following? Tick YES or NO and give details where necessary.

	YES	NO	Notes on history
14 Previous diving medical			
15 Prescription glasses			
16 Contact lenses			
17 Eye or visual problems			
18 Hay fever			
19 Sinusitis			
20 Any other nose or throat problem			
21 Dentures/plates, dental prostheses			
22 Recent dental procedures			
23 Deafness or ringing noises in ears			
24 Discharging ears or other infections			
25 Operation on ears			
26 Giddiness or loss of balance			
27 Severe motion sickness			
28 Seasickness medication			
29 Any problem when flying in aircraft			
30 Severe or frequent headaches			
31 Migraine			
32 Fainting or blackouts			
33 Convulsions, fits or epilepsy			
34 Unconsciousness			
35 Concussion or head injury			
36 Sleepwalking			
37 Severe depression			
38 Claustrophobia			
39 Mental illness			
40 Heart disease			
41 Abnormal blood test			
42 ECG (heart racing)			
43 Consciousness of your heart beat			
44 High blood pressure			
45 Rheumatic fever			
46 Discomfort in your chest with exertion			
47 Shortness of breath on exertion			
48 Bronchitis or pneumonia			
49 Pleurisy or severe chest pain			

	YES	NO	Notes on history
50 Coughing up phlegm or blood			
51 Chronic or persistent cough			
52 TB			
53 Pneumothorax (collapsed lung)			
54 Frequent chest colds			
55 Asthma or wheezing			
56 Use a puffer			
57 Other chest complaint			
58 Operation on chest, lungs or heart			
59 Indigestion, peptic ulcer or acid reflux			
60 Vomiting blood or passing red or black motions			
61 Recurrent vomiting or diarrhea			
62 Jaundice, hepatitis or liver disease			
63 Malaria or other tropical disease			
64 Severe loss of weight			
65 Hernia or rupture			
66 Major joint or back injury			
67 Limitation of movement			
68 Fractures (broken bones)			
69 Paralysis or muscle weakness			
70 Kidney or bladder disease (cystitis)			
71 In a high risk factor for HIV or AIDS			
72 Syphilis			
73 Diabetes			
74 Blood disease or bleeding problem			
75 Skin disease			
76 Contagious disease			
77 Operations			
78 In hospital for any reason			
79 Life insurance rejected			
80 A job or a licence refused on medical grounds			
81 Unable to work for medical reasons			
82 An invalid pension			
83 Any other illness or injury or any other medical condition			
Have any blood relations had :			
84 Heart Disease			
85 Asthma or chest disease			
86 TB			
Females only:			
87 Are you possibly pregnant or planning to be			
88 Do you have any incapacity during periods?			
89 Date of last chest X-ray?			

Previous Diving Experience

	YES	NO	Notes on history
90 Can you swim?			
91 Have you ever had any problem during or after swimming or diving?			
92 Have you ever had to be rescued?			
93 Do you snorkel dive regularly?			
94 Have you tried SCUBA diving before?			
95 Have you had previous formal SCUBA training?			
96 Year			
97 Approximate number of dives			
98 Maximum depth of any dive			
99 Longest duration of any dive?			

I certify that the above information is true and complete to the best of my knowledge and I hereby authorize Dr _____ to give medical opinion as to my fitness, or temporary or permanent unfitness to dive to my diving instructor. I also authorize him or her to obtain or supply medical information regarding me from or to other doctors as may be necessary for medical purposes in my personal interest.

Signed _____

Date _____

ADVICE TO THE EXAMINING PHYSICIAN

Issuing an itemized account, which enables the patient to claim Medicare benefits for diving medical examinations, has been prohibited since 1 February 1984.

Diving is a sport carried on in a non-respirable environment using breathing apparatus. Sudden unconsciousness underwater is usually fatal when using SCUBA equipment, as the relaxation of muscle tone accompanying unconsciousness results in the breathing regulator falling from the victim's mouth. The diver's next breath will then be water. This makes any condition which can cause sudden unconsciousness an absolute bar to diving. Such conditions include epilepsy and diabetes where the patient requires insulin.

A further problem with the water environment is that pressure increases very rapidly with descent, i.e. by one atmosphere of extra pressure for every 10m of depth in the sea. The use of breathing apparatus, providing gas at ambient pressure, prevents problems of pressure – volume imbalance in the lungs during descent. However, the middle ears and sinuses will develop problems on descent unless the pressure in these spaces equals the ambient pressure. There is no way of establishing the patency of sinus ostia by clinical examination. However, patency of the Eustachian tubes, and so the ability to equalize the middle ear pressures, can be established easily. Observation of the tympanic membrane while the patient holds his or her nose, shuts the mouth and blows (Valsalva manoeuvre) will reveal ingress of air to the middle ear by movement of the drum. The Eustachian tube opening in the nasopharynx is normally closed. Swallowing opens the ostium. Therefore, a combination of a Valsalva and swallowing during the manoeuvre will give the best chance for air to travel up the Eustachian tube. Another way of opening the Eustachian tube is to protrude the jaw and wiggle it from side to side while performing a Valsalva manoeuvre. Failure to auto inflate a middle ear is an absolute bar to diving until the person can auto inflate.

A further set of pressure related problems also occur during ascent when the ambient pressure is decreasing. If an air filled space cannot vent when the surrounding pressure is reduced, two things can happen. A space with elastic sides can expand but if the space has rigid walls, the pressure in the space remaining at the original pressure becomes higher than ambient pressure. The chest wall is elastic, but after a certain expansion the stretching of the lungs results in tearing of the lung substance. Air can then enter the pulmonary venous drainage, pass through the left portion of the heart and be carried to the brain as air embolism. Unconsciousness and death can result. Thus, any condition preventing normal emptying of the lungs is an absolute bar to diving.

Lung cysts, bullae, and other areas that empty slowly or not at all are an absolute bar to breathing air under pressure. These conditions are best declared by taking an X-ray of the chest in full inspiration and another in full expiration. Asthma is another such condition. To detect expiratory airway obstruction, a Vitalograph (or similar) test is required. Experience in the navies of the world, with submarine escape training of many thousands, has shown that a disproportionate number of those suffering burst lungs have FEV1/FVC ratios of below 75%. Such people do not need to hold their breath on ascent to damage their lungs; all they have to do is rise too rapidly. People with FEV1/FVC ratio below 75% cannot be considered fit for diving.

A normal FEV1/FVC ratio but clinical signs of bronchospasm, especially on forced deep, rapid ventilation, are an indication of unfitness to dive.

Treatment with drugs is not suitable as the effects can wear off underwater and the combined effects of pressure and bronchodilator drugs are uncertain.

It is hoped that the foregoing makes the following list of absolute and relative contraindications to diving logical and comprehensible :

ABSOLUTE CONTRAINDICATIONS

Conditions causing unconsciousness

Epilepsy

Diabetes where the patient requires insulin

ENT conditions

Inability to auto inflate the middle ears. Previous middle ear surgery with insertion of prosthesis to replace any of the ossicles.

Lung conditions

Asthma

Lung cysts

Previous spontaneous pneumothorax

Obstructive lung disease

Lungs which empty unevenly (X-ray appearance)

Previous thoracotomy

RELATIVE CONTRAINDICATIONS

FEV1/FVC ratio less than 75%

Poor physical condition

Previous myocardial infarction

Pregnancy

Further information about medical standards for minimum entry level SCUBA divers is to be found in AS 4005.1, available from Standards Australia.

If in doubt about a candidate's fitness, it is safer for the candidate to be classed as unfit than fit to dive. Difficult decisions should be referred to doctor experienced in diving medicine. These are to be found in each state. The South Pacific Underwater Medicine Society* maintains a list of its members with training in diving medicine. Enquiries should be addressed to the Secretary of SPUMS, C/- Australian College of Occupational Medicine, PO Box 2090, St Kilda West, Victoria 3182. URGENT specialist advice can be obtained from the hyperbaric unit in each state, the RAN School of Underwater Medicine, HMAS Penguin, Balmoral, NSW 2091, phone (02) 9960 0444, and the Diving Emergency Service, C/- Hyperbaric Medical Unit, Royal Adelaide Hospital, phone (008) 08 8200.

Recommended reading

DIVING AND SUBAQUATIC MEDICINE Edmonds, C, Lowry, C, and Pennefather, J, 2nd Edition, 1981. Revised 1983. Sydney: Diving Medical Centre.

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- The South Pacific Underwater Medicine Centre exists –
 - (a) to promote and facilitate the study of all aspects of underwater and hyperbaric medicine; and
 - (b) to provide information on underwater and hyperbaric medicine.