

招請講演 I

Health and Fitness of Divers

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Because of the unique environment in diving, Health and fitness are major considerations in selecting individuals for diving activities. Diving environments vary greatly among recreational divers, commercial divers, and military divers. Military divers, and commercial deep saturation divers require high medical and physical standards, while recreational divers have less stringent requirements. Among all divers certain medical disorders prohibit diving. These include drug dependent seizure disorders, insulin dependent diabetes mellitus, spontaneous pneumothorax, congestive heart failure, atrial septal defect, chronic lung disease, and any debilitating illness. Asthma is a contraindication to diving among commercial and military divers, but in some countries, sport divers are approved for diving with asthma. Surveys in the USA indicate that 5-6% of sport divers have asthma, and have completed certification programs. In sport diving, coronary disease does not restrict diving if revascularization has been done, and exercise can be performed without ischemia. For most commercial and sport diving, an exercise capacity of 13 mets (VO_2 max of 40-45ml/kg/min) is adequate for most diving activity. Military divers should be in excellent physical condition with exercise capacity exceeding 13 mets. All diving populations contain hypertensive subjects who require therapy. Medication alone is not a contraindication to diving in any group, but military divers have the least tolerance for

medication due to unpredictable duty requirements. Pregnancy is considered a contraindication to diving in military and most commercial diving. Pregnant sport divers are usually advised to avoid diving until parturition. Some data suggest that the spontaneous abortion rate is higher in women who dive. Drugs which inhibit normal mental function, or limit circulatory responses to exercise should be reviewed carefully in each diver before providing approval for diving.

Criteria for military and commercial divers should consider physical fitness, capacity to withstand heavy work, prolonged working hours, remote and adverse environmental conditions, use of mixed gas, and saturation diving. Because sport divers can exert some control over their diving environment by selection of the time and location of diving, requirements are based on physical capacity, and risk of sudden loss of consciousness underwater.