Instructor Dive Development

MEDISCH ONDERZOEK
MEDISCH GEHEIM

INVULLEN IN BLOKLETTERS A.U.B.

Naam: _____ Voornaam: _____

Adres: _____ Geslacht: man / vrouw

Postcode: _____ Geboortedatum: _____

Woonplaats: _____ Telefoon: _____

Land: _____ Telefax: _____

AAN DE ARTS:

Deze persoon wil meedoen of is op dit moment gebrevetteerd om met persluchtapparatuur om te gaan. Uw mening omtrent de medische geschiktheid voor het persluchtduiken wordt verzocht. U wordt verzocht de richtlijnen voor het medische onderzoek voor het persluchtduiken door te nemen. Indien u geen omstandigheden en/of medische redenen heeft gevonden die strijdig zijn met het beoefenen van de duiksport kan dit medisch onderzoek worden afgegeven. Dit medisch onderzoek heeft een geldigheid van één jaar na datum afgifte.

AANDACHTSPUNTEN:

- ❑ Mentale Stabiliteit
- ❑ Lichamelijk onderzoek
- ❑ Oren en sinussen (moeten geklaard kunnen worden)
- ❑ Hartfunctie (moet vrij van ruis zijn)
- ❑ Controle medische historie
- ❑ Röntgenonderzoek (optioneel)
- ❑ Ademhaling
- ❑ Lichamelijke conditie

UITSLAG VAN HET ONDERZOEK:

❑ ONDERGETEKENDE ARTS HEEFT GEEN OMSTANDIGHEDEN EN/OF MEDISCHE REDENEN GEVONDEN DIE ONVERENIGBAAR ZIJN MET HET BEOEFENEN VAN DE DUIKSPORT MET PERSLUCHTAPPARATUUR.

❑ ONDERGETEKENDE ARTS KAN DEZE PERSOON NIET GOEDKEUREN VOOR HET BEOEFENEN VAN DE DUIKSPORT MET PERSLUCHTAPPARATUUR.

OPMERKING: _____

Naam keuringsarts: _____ Datum: _____

Adres: _____ Postcode: _____

Plaats: _____ Telefoon: _____

_____ _____

Handtekening keuringarts Stempel keuringsarts

IDD INSTRUCTOR DIVE DEVELOPMENT

RICHTLIJNEN LICHAMELIJK ONDERZOEK VOOR DE RECREATIEVE DUIKER

Instructies voor de arts:

Recreatief duiken (met perslucht) staat bekend als uiterst veilig. Om deze status te kunnen handhaven, is het belangrijk om aankomende duikers op lichamelijke gebreken te onderzoeken die onderwater gevaar zouden kunnen opleveren.
Het lichamelijke onderzoek voor de recreatieve duiker gaat in op de medische status, de lichamelijke gesteldheid en omvat een lichamelijk onderzoek. Het onderzoek is erop gericht om lichamelijke gebreken te ontdekken, die voor een duiker een verhoogd risico zouden kunnen betekenen ten aanzien van decompressie ziekte, longoverdruk syndromen die aanvullend een hersenembolie tot gevolg kunnen hebben en bewustzijnsverlies die tot verdrinking zou kunnen leiden. Daar komt nog bij dat de duiker met een zekere mate van koude stress moet kunnen omgaan, moet kunnen omgaan met de optische effecten van water en een reserve moet hebben aan lichamelijke en geestelijke vermogens om mogelijke noodsituaties het hoofd te bieden.
De medische status, de lichamelijke gesteldheid en het lichamelijke onderzoek moet minimaal de hieronder beschreven punten omvatten. De lijst met relatieve en absolute contra-indicaties is niet alles omvattend. De lijst bevat slechts die medische problemen waarmee men het meest wordt geconfronteerd. De korte inleidingen dienen om de arts te attenderen op de aard van de medische problemen die een duiker in gevaar zouden kunnen brengen en om hem ertoe te bewegen de individuele gezondheidstoestand van de patiënt te overwegen.
Diagnostisch onderzoek en specialistisch consult moeten worden aangewend zoals aangegeven staat, om de arts van de status van de duiker te overtuigen. Een lijst met referenties is bijgesloten om hulp te bieden bij het verduidelijken van probleempunten die mogelijkerwijs ontstaan. Artsen aangesloten bij het Divers Alert Network (DAN) zijn beschikbaar voor telefonische consultatie +32 - 2 - 3776043 tijdens de normale openingsuren. Bel voor spoedgevallen, dag en nacht, 7 dagen per week: +41 - 1 - 1414 (REGA Zwitserland, Internationaal duikongevallen noodnummer).
Sommige lichamelijke condities zijn absolute contra-indicaties voor het duiken. Bij lichamelijke condities die absoluut contra-indicatief zijn, loopt de duiker een verhoogd risico op verwonding of de dood. Er zijn ook relatieve contra-indicaties voor het duiken die met de tijd kunnen worden opgelost door het toepassen van een juiste medisch behandeling. Uiteindelijk moet de arts samen met de persoon in kwestie beslissen of de persoon lichamelijk geschikt is om te kunnen gaan persluchtduiken gebaseerd op zijn kennis over de medische status van de patiënt.
Denk er altijd aan dat persluchtduiken een recreatieve sport is dat plezierig moet zijn en geen aanleiding mag geven tot ziek worden of sterven.

CARDIOVASCULAR SYSTEMS

Relative Contraindications: The diagnoses listed below potentially render the diver unable to meet the exertional performance requirements likely to be encountered in recreational diving. The diagnoses listed 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 13 METS. Failure to meet the exercise criteria is disqualifying. Conditioning and retesting may make later qualification possible.

- **History of CABG or PCTA for CAD**
- **History of myocardial infarction**
- **Hypertension**

- **History of dysrythmias requiring medication for suppression**
- **Valvular regurgitation**
- **Asymptomatic mitral valve prolapse**
- **Pacemakers-** The pathologic process that necessitated pacing should be addressed regarding the fitness to dive. Finally 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 (to depths of 130 feet of sea water).

Absolute Contraindications: Venous gas emboli produced during decompression may cross **intracardiac shunts** and enter the cerebral circulation with potentially catastrophic results. **Asymetric septal hyperthrophy** and **valvular stenosis** may lead to the sudden onset of unconsciousness during exercise.

- **Congestive heart failure**

PULMONARY

Any process or lesion that impedes air flow from the lung places the diver at risk for pulmonary overinflation with alveolar rupture and the possibility of cerebral air embolization. Asthma (reactive airway disease), COPD cystic or cavitating lung diseases all may lead to air trapping. Spirometery, provocative tests such as methacholine challenge and other studies to detect air trapping should be carried out to establish to the examining physician's satisfaction that the diver is not at risk. A **pneumothorax** that occurs to recurs while diving is catastrophic. As the diver ascends, air trapped in the cavity expands rapidly producing a **tension pneumothorax**.

Relative Contraindications:

- **History of prior asthma or reactive airway disease (RAD)***
- **History of exercises / cold induced bronchosphasm (EIB)***
- **History of solid, cystic of cavitating lesion***
- **Pneumothorax secondary to:** thoraric surgery,* trauma or pleural penetration,* previous overinflation injury*
- **Restrictive Disease**

  (*Air trapping must be excluded) (**Exercise Testing necessary)

Absolute Contraindications:

- **Active RAD (asthma), EIB, COPD or history of the same with abnormal PFT's or positive challenge**
- **Restrictive diseases with exercise impairment**
- **History or spontaneous pneumothorax**

NEUROLOGICAL

Neurologic abnormalities that affect a diver's ability to perform exercise should be assessed individually based on the degree of compromise involved.

Relative Contraindications:

- **Migraine headaches** whose symptoms or severity impair motor or cognitive function
- **History of head injury with sequelae *other than* seizure**
- **Herniated nucleus pulposus**
- **Peripheral neuropathy**
- **Trigeminal neuralgia**
- **History of spinal cord or brain injury without residual neurologic deficit**
- **History of cerebral gas embolism without residual pulmonary air trapping has been excluded**
- **Cerebral palsy in the absence of seizure activity**

Absolute Contraindications: Abnormalities where the level of consciousness is subject to impairment put the diver at increased risk of drowning. Drivers with spinal cord or brain abnormalities where perfusion is impaired are at increased risk of spinal cord or cerebral decompression sickness.

- **History of seizures other than childhood febrile seizures**
- **Intracranial tumor or aneurysm**
- **History of TIA or CVA**
- **History of spinal cord injury, disease if surgery with residual sequelae**
- **History of Type II (serious and/ or central nervous system) decompression sickness with permanent neurologic deficits**

OTOLARYNGOLOGICAL

Equalization of pressure must take place during ascent and decent 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 or rupture due to failure to equalize pressure or due to marked overpressurization during vigorous or explosive Valsalva maneuvers.

The larynx and pharynx must be free of an obstruction to airflow. The laryngeal and epiglotic 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 Contraindications:
- **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 associates *with barotrauma***
- **Full prosthedontic devices**
- **History of mid-face fracture**
- **Unhealed oral surgery sites**
- **History of head and/ or neck therapeutic radiation**
- **History of temperomandibular joint dysfunction**

Absolute Contraindications:
- **Monomeric TM**
- **Open TM perforation**
- **Tube myringotomy**
- **History of stapedectomy**
- **History of ossicular chain surgery**
- **History of inner ear surgery**
- **History of round window rupture**
- **Facial nerve paralysis *secondary to barotrauma***
- **Inner ear disease other than presbycusis**
- **Uncorrected upper airway obstruction**
- **Laryngectomy or status post partial larynyectomy**
- **Trachestostomy**
- **Uncorrected laryngocele**
- **History of vestibular decompression sickness**

GASTROINTESTINAL

Relative Contraindications: As with other organ systems and disease states, a process that debilitates the diver chronically may impair exercise performance. Additionally diving activity may take place in areas remote from medical care. The possibility of acute recurrences of disability or lethal symptoms must be considered
- **Peptic ulcer disease**
- **Inflammatory bowel disease**
- **Malabsorption states**
- **Functional bowel disorders**
- **Post gastrectomy dumping syndrome**
- **Paraesophageal or hiatal harnia**

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

- **High grade gastric outlet obstruction**
- **Chronic or recurrent small bowel obstruction**
- **Entrocutaneous fistulae that not drain freely**
- **Esophageal diverticula**
- **Severe gastroesophageal reflux**
- **Achalasia**
- **Unrepaired hernias of the abdominal wall potentially containing bowel**

METABOLIC AND ENDOCRINOLOGICAL

Relative Contraindications: 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. Generally divers with altered hormonal status should be in as near an optimal physiologic state as is possible. It should be noted that obesity predisposes the individual to decompression sickness and is an indicator of poor overall physical fitness.

- **Hormonal excess to deficiency**
- **Obesity**
- **Renal insufficiency**

Absolute Contraindications: the potentially rapid change in level of consciousness associated with hypoglycemia in **diabetics on insulin therapy or oral anti-hypoglycemia medications** can result in drowning. Diving is therefore contraindicated.

PERGNANCY

Venous gas emboli formed during decompression may result in fetal malformations. **Diving is absolutely contraindicated during any stage of pregnancy.**

HEMATOLOGICAL

Abnormalities resulting in altered rheological properties may increase the risk of decompression sickness.

Relative Contraindications:

- **Sickle cell trait**
- **Acute anemia**

Absolute Contraindications:

- **Sickle cell disease**
- **Polycythemia**
- **Leukemia**

ORTHOPEDIC

Relative impairment of mobility particularly in the small boat environment or ashore with equipment weighing up to 40 pounds must be assessed. The impact of exercise ability is also an important consideration.

Relative Contraindications:
- **Chronic back pain**
- **Amputation**
- **Scoliosis- must also assess impact on pulmonary function**
- **Aseptic necrosis- possible risk of progression related to adequacy of decompression**

BEHAVIORAL HEALTH

Behavioral: the diver's mental capacity and emotional makeup are important to save 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 divers and react to changes about him in the underwater environment. The student's motivation to learn scuba and his ability to deal with potentially dangerous situations is also crucial to save diving.

Relative Contraindications:
- **Developmental delay**
- **History of drug or alcohol abuse**
- **History of previous psychotic episodes**

Absolute Contraindications:
- **Inappropriate motivation to dive- solely to please spouse or partner, to prove oneself in the face of personal fears**
- **Claustrophobia and agoraphobia**
- **Active psychosis or while receiving psychotropic medications**
- **Drug or alcohol abuse**

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