

Purpose:

The EDTC aims to make European professional diving safer.

Its motto is Securitas per unitatem.

Funded 1973. 2005 17 member countries



Dykläkarmöte marinen
Nov 2011

The EDTC seeks to reach its aim by:

Providing an independent European forum which may make recommendations relating to diving safety, technology and diving medicine,

Providing a place for discussions on matter related to manned underwater operations and in particular types of diving, types of equipment and their use, together with medical aspects, examination and monitoring for fitness of divers,

Where applicable, recommending harmonisation so that common standards may be achieved,

Providing where appropriate, advice to governments, other organisations and individuals concerned with diving,



Dykläkarmöte marinen
Nov 2011

Membership in EDTC:

Membership is open to representatives of any country within geographical Europe. Each country may be represented by a single representative from each of the following categories:

- Industry
- Government
- Medical
- Union



Dykläkarmöte marinen
Nov 2011

Swedish representatives in EDTC:

Government

**Mr. Staffan Littorin, Swedish Armed Forces Headquarters
Department of Procurement and Training, SE-107 85 Stockholm**

Industry

**Mr. Jorn Ryberg, Svensk Sjöentreprenad AB, Box 1129
SE-262 22 Angelholm**

Medical

**Prof. Mats Hagberg, Occupational & Environment Medicine,
Sahlgrenska University Hospital, Box 414, SE-40530 Göteborg**

Union

Mr. Urban Johansson, Lilla Strandriksv 1, 43992 Onsala



Dykläkarmöte marinen
Nov 2011

Documents issued by EDTC:

- Goal-setting Principles for Harmonised Diving Standards in Europe
- EDTC and IMCA Competence Standard
- Training standards for diving and hyperbaric medicine
- Fitness to dive standard
- Offshore Diving Regulations: Different countries



Dykläkärmöte marinen
Nov 2011

Fitness to Dive Standards

Guidelines for Medical Assessment of Working Divers



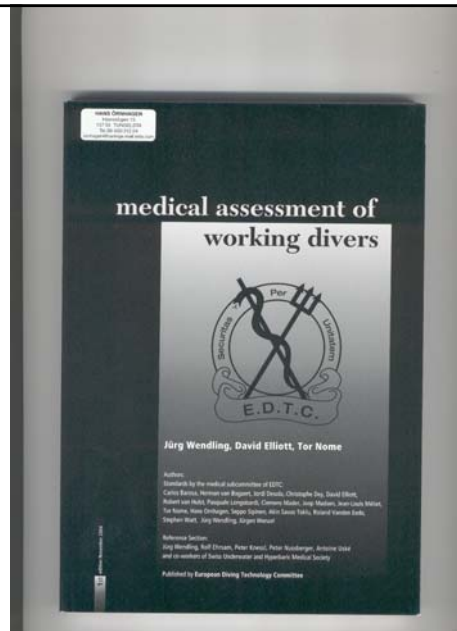
Contents

1. Foreword	2
2. Introductory remarks	3
3. Forms for Examination of divers (EDTC standard template).....	7
4. General Guidelines.....	11
Cardio-vascular assessment.....	11
Airway assessment.....	13
Ear, Nose and Throat Assessment.....	14
Neurological assessment.....	16
Inner Organs.....	17
Assessment of musculo-skeletal system.....	19
Vision.....	20
Diverse Conditions.....	21
Resumption of diving after a decompression injury.....	23
5. Annex	
A) Reliable tests of physical fitness.....	24
B) Training standards for diving and hyperbaric medicine.....	26
Prepared by the Joint Medical Subcommittee of ECHM and EDTC	
C) National contact addresses and links.....	33

phlstandards\who\rev5.doc / 24.06.03



Dykläkärmöte marinen
Nov 2011



**STANDARD RECORD FORMS
FOR MEDICAL ASSESSMENT OF WORKING DIVER**

Family name / First name: _____
 Date of birth: _____
 Street address: _____
 Postal code / City / Country: _____
 Telephone: _____
 Occupation / type of diving: _____
 Company (employer) / Diving training agency: _____

Photo

IN DEPTH ASSESSMENT: HISTORY (preliminary and periodical)

The history has to be taken by the examining doctor together with the diver in order to make sure that the candidate has understood the questions properly and to give the examining doctor a chance to study the behaviour and mental state of the candidate during the examination. An adapted diving questionnaire for self-assessment may be handed to the diver before the interview. On completion the diver's signature should be returned.

- Diving history / motivation for diving (previous diving experience, training level, type of diving, professional goals), previous diving related illness (check the logbook)
- Sports activities, frequency of training, previous sports medical assessments. Any incapacity for work in the past 3 years (more than 3 weeks), any incapacity for military service
- All hospitalisations, surgical interventions, accidents
- Medical consultations, medical treatment since last in-depth assessment (ask for examining physician and date)
- Weight, height, any changes during last year
- Medications (previous or current)
- Smoking, alcohol, drugs
- Allergies, conjunctivitis, rhinitis, asthma, eczema
- Ear problems, middle-ear inflammation, rupture of eardrum, hearing difficulties (even unilateral), audiograms
- Dizziness, unconsciousness
- Sinus problems
- Dental problems, prostheses
- Respiratory problems (dyspnoea, coughing, phlegm, pneumothorax, asthma)
- Previous or current cardiovascular problems (heart-rhythm disturbances, blood pressure)
- Diabetes mellitus, other metabolic or endocrinological diseases
- Musculo-skeletal (back or joint) pain, inflammation, arthritis, injuries
- Vision (possibly with contact lenses), colour vision
- Epileptic fits (seizure, absences, hyperventilation fits)
- Psychiatric or psychological problems, i.e. anxiety, depression, panic disorders, claustrophobia, treatments)
- Family history

Remarks: _____

phlstandards_sdrh_v04.doc / 24.06.03

**STANDARD RECORD FORMS
FOR MEDICAL ASSESSMENT OF WORKING DIVER**

IN DEPTH ASSESSMENT (CONTINUATION): EXAMINATION

These examinations represent a minimum. If in doubt or when history or signs might represent a contraindication, further evaluation is necessary (see list of contraindications).

- Height, weight, body mass index (BMI)
- Otoscopy with Valsalva-test (or Toynbee, eardrum mobility or scarring) simple hearing test (if in doubt ear microscopy and tympano- +/- Audiogram).
- Examination of throat and teeth
- Neurology: Incontinence system: Nystagmus (spontaneous and after head movement), sharpened Romberg test, sensitivity and motor function, gait, grasping small objects, reflexes (patella and Achilles, etc.), cranial nerves
- Lung and heart auscultation, blood pressure, heart rate (for any unusual sign and BP > 140/90, see contraindications pages)
- If age 45 and more years: stress ECG (by cardiologist)
- Lung function including FEV₁, FVC, flow-volume-curve (or peak-flow if curve not available). If not within 80% of normal values, see contraindications pages
- Submaximal stress-test for aerobic capacity (give reference, examples see annex A). If VVO, max. extrapolation from tables is below expected maximal workload, see contraindications pages
- Laboratory: complete blood picture count, haematocrit, blood-sugar. Sickle cell disease to be excluded (only for subjects who could be affected). Urine: strip
- Examination of abdomen (hernia, scars, resistance)
- Psychological judgment (see introductory remarks and contraindications pages)
- Additional examinations:
 - if assessment of lung structure is thought to be indicated perform chest x-ray and spiral CT scan of lungs (to exclude emphysema bullae)
 - screening for long term effects (bone necrosis): only for divers who average 20 hours of diving per week and diving over 30m; MR imaging (or x-ray of hips AP, shoulders AP), blood-test for lipids.
 - any consultations of specialists or diving medicine experts: _____
 - audiogram if required for hearing conservation program.

Conclusions and comments (informed consent), remarks for the diver

Date/City: _____ Stamp, address of Doctor

Signature of examining physician: _____

Signature of candidate: _____ No. of medical license

phlstandards_sdrh_v04.doc / 24.06.03

Dyklärmöte marinen
Nov 2011

**STANDARD RECORD FORMS
FOR MEDICAL ASSESSMENT OF WORKING DIVER**

Family name/First name: _____
 Date of birth: _____
 Street address: _____
 Postal code / City / Country: _____
 Telephone: _____
 Occupation / type of diving: _____
 Company (employer) / Diving training agency: _____

ANNUAL MEDICAL ASSESSMENT

History (continue to be completed by the physician):

- Date of the last previous examination, by which physician?
- Accidents, diseases, or hospitalization, other health problems or medical consultations since last examination
- Incapacity for work for more than 3 weeks
- Personal habits (sports, nicotine, alcohol)
- Medications
- Changes in body weight
- Diving experience: (professional and recreational)
 - hours in water (check logbook)
 - number of different kinds of dives (sat, bounce air, nitrox, mixed gas, hard hat)
- Diving incidents/accidents
- Any symptoms or problems while diving: transient alterations of sensation (numbness, paresthesia), muscle- or joint-pain, headache, skin symptoms (rashes, itching, subcutaneous emphysema), pressure equalization problems, dizziness, vertigo, depth-amblyopia, exsanguis, panic reaction, other (stomach, teeth, abdominal)

Notes: (if indicated after interview or visited by the diver)

- Otoscopy with Valsalva
- Heart and lung auscultation, blood pressure, heart-rate, sharpened Romberg test

As in the case of in depth examinations, further clarification is necessary whenever any doubt or questions arise in the history or any marked findings are observed.

Additional examinations: _____

Specialists consulted: _____

Judgment / Comments (informed consent)

Date/City: _____ Stamp, address of Doctor

Signature of medical examiner of divers: _____

Signature of candidate (optional): _____ No. of medical license

phlstandards_sdrh_v04.doc / 24.06.03

Dyklärmöte marinen
Nov 2011

Excerpt from: TRAINING STANDARDS FOR DIVING AND HYPERBARIC MEDICINE
Prepared by the Joint Medical Subcommittee of ECHM and EDTC.
Full text at: www.edtc.org

Level 1. "Medical Examiner of Divers" (MED)

Competent to perform the "Fitness to dive assessments" of working and recreational divers and compressed air workers, except the resume diving assessment of after major decompression incidents.



Dykläkarmöte marinen
Nov 2011

Excerpt from: TRAINING STANDARDS FOR DIVING AND HYPERBARIC MEDICINE
Prepared by the Joint Medical Subcommittee of ECHM and EDTC. Full text at: www.edtc.org

Level 2D. "Diving Medicine Physician" (DMP)

Competent to perform the initial and all other assessments of working and recreational divers or compressed air workers.

Can manage diving accidents and advise diving contractors and others on diving medicine and physiology (with the back-up of a diving medical expert or consultant).

Should have knowledge in relevant aspects of occupational health. He or she does not need to be certified specialist in occupational medicine to be in accordance with the standards, but it is recommended also for those of Level 1 who examine commercial divers and compressed air workers.

Should have certified skills and basic practical experience in fitness-to-dive assessment, management of diving accidents, safety planning for professional diving operations, advanced life support and acute trauma care as well as general wound care.



Dykläkarmöte marinen
Nov 2011

Excerpt from: TRAINING STANDARDS FOR DIVING AND HYPERBARIC MEDICINE
Prepared by the Joint Medical Subcommittee of ECHM and EDTC.
Full text at: www.edtc.org

Level 2H. "Hyperbaric Medicine Physician" (HMP)

Responsible for hyperbaric sessions at the treatment site (with backup of a hyperbaric medicine expert or consultant)

Should have appropriate experience in anaesthesia and intensive care in order to manage the HBO patients (he or she does not need to be certified specialist in anaesthesia and intensive care to be in accordance with the standards)

Competent to assess and manage clinical patients for HBO treatment



Dykläkarmöte marinen
Nov 2011

Excerpt from: TRAINING STANDARDS FOR DIVING AND HYPERBARIC MEDICINE
Prepared by the Joint Medical Subcommittee of ECHM and EDTC.
Full text at: www.edtc.org

Level 3. "Hyperbaric medicine expert or consultant (hyperbaric and diving medicine)"

Competent as chief of a hyperbaric facility (HBO centre) and/or to manage the medical and physiological aspects of complex diving activities.⁴

Competent to manage research programs.

Competent to supervise his team (HBO doctors and personnel, health professionals and others).

Competent to teach relevant aspects of hyperbaric medicine and physiology to all members of staff.



Dykläkarmöte marinen
Nov 2011

IV. "Associated specialists"

This title is not a job qualification, but rather a function. It covers experts, consultants and specialists of other clinical specialities who can be nominated as competent to advise within their own speciality upon specific problems in the diving and hyperbaric field.



Dykläkarmöte marinen
 Nov 2011

4. Content of modules

The required competence needed for each subject differs at each of Levels 1, 2D, 2H and 3 (Table 1). Description of levels of competence is included in the Appendix 1. Training objectives for both Level 2D and Level 2H are included in Appendix 2 and 3, respectively.

Table 1. Modules with level of competence (LoC) and proposed number of hours (NoH).
 Levels of competence: a – basic; b - need to know; c - must be expert.

	Jobs:	1	2D LoC	2D NoH	2H LoC	2H NoH	3
1	Physiology & pathology of diving and hyperbaric exposure:			24		30	
1.1	Hyperbaric physics	b	c	2	c	2	c
1.2	Diving related physiology I (functional anatomy, respiration, hearing and equilibrium control, thermoregulation)	b	c	1	b	1	c
1.3	Hyperbaric pathophysiology of immersion	b	c	2	a	2	c
1.4	Pathophysiology of decompression	b	c	2.5	b	2.5	c
1.5	Acute dysbaric disorders: a brief introductory section	b	c	2.5	b	2.5	c

5.9	Safety regulations	-	c	1	c	3	c
6	Miscellaneous			2		2	
6.1	Research standards	-	a	1	a	1	c
6.2	Paramedics teaching program	-	b	0.5	a	0.5	c
6.3	Management /Organisation of HBO facility	-	a	0.5	a	0.5	c
7	Practical training:			24		24	
7.1	Fitness of the course participants	-	+	2	+	2	+
7.2	Practical revision of examination skills	+	+	1	+	1	+
7.3	Practice in HBO-T (including pressure test and experience of nitrogen narcosis)	-	+	8	+	8	+
7.4a	CPR	-	+	2	+	2	+
7.4b	Practice in field first aid (diving accidents)	-	+	2	-	2	+
7.5	Underwater experience	(+) ²	+ ⁴	4	-	4	+
7.6a	Demo : professional diving	+	+	4	-	1	+
7.6b	Demo : HBO-T	-	+	1	+	4	+
TOTAL:		28	-	80	-	120	-

In order to take into account the development of modern educational techniques, a credit system will be used by the accreditation body with a conversion rule ensuring that all content of the syllabus will

EDTC-ECHM training program for physicians

Table 2. Teaching hours for each level.

Level 1 Medical Examiner of Divers 25 lecture hours + 3 hours practical
Renewal every 5 years

Level 2D Diving Medicine Physician 80 hours of training
Renewal every 5 years

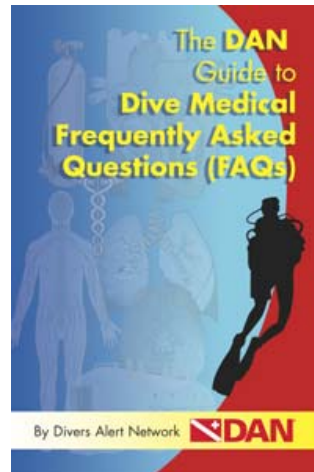
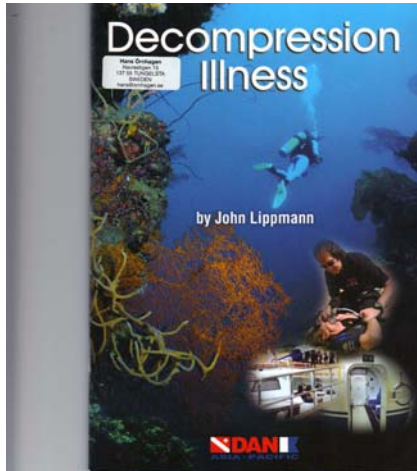
Level 2H Hyperbaric Medicine Physician 120 hours of training
Renewal every 5 years

Level 3 Diving and Hyperbaric Medicine Expert or Consultant
This needs further review (see below)



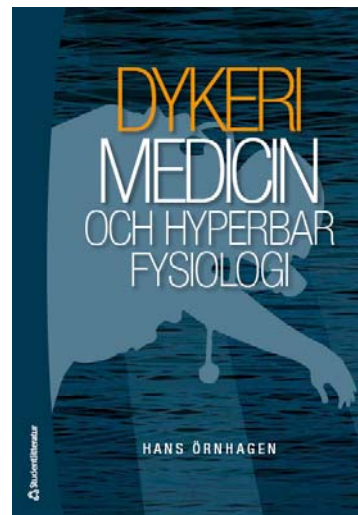
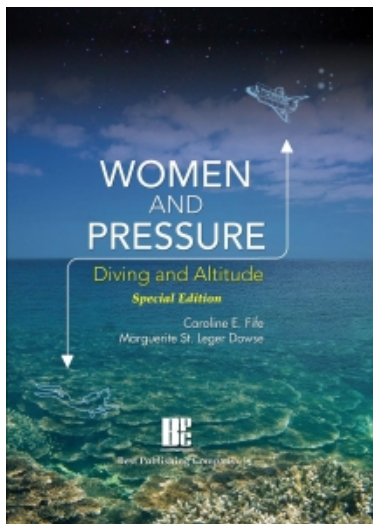
Dykläkarmöte marinen
Nov 2011

Exempel på ny litteratur för vidarestudier.



Dyklärmöte marinen
Nov 2011

Exempel på ny litteratur för vidarestudier.



Dyklärmöte marinen
Nov 2011