HEALTH AND SAFETY AUTHORITY

The Medical Examination and Assessment of Divers at Work

Our Vision: Healthy, safe and productive lives and enterprises

Acknowledgements

This document is based on the Health and Safety Executive (United Kingdom) document *the Medical Examination and Assessment of Commercial Divers (MA1)*. The Health and Safety Authority (HSA) would like to thank the Executive for their permission to reproduce parts of this document. The HSA would also like to thank Dr. Alex Reid, Medical Advisor to the HSA, for his advice.

HEALTH AND SAFETY AUTHORITY

TABLE OF CONTENTS

Published in November 2019 by the Health and Safety Authority, The Metropolitan Building, James Joyce Street, Dublin 1.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 This document provides guidance and information on becoming a medical examiner of divers and the best practice standards for the medical examination, assessment and certification of divers. It is aimed at registered medical practitioners who wish to become approved medical examiners of divers (AMEDs) and also AMEDs performing fitness to dive medicals for the purposes of the Safety, Health and Welfare at Work (Diving) Regulations 2018 and 2019 (S.I. No. 254 of 2018 as amended by S.I. No. 180 of 2019), hereafter known as the Diving Regulations. The document is intended to assist AMEDs when performing assessments and aims to provide a uniform standard for such assessments.

1.2 In the context of this document and as defined in the Diving Regulations, a diver is a person who dives in the course of their work. An AMED is a person who is a registered medical practitioner and who is approved by the Health and Safety Authority to issue a certificate of medical fitness to dive.

1.3 The standards and guidance reflect the need to protect the safety, health and welfare of divers at work. They take account of the mental and physical requirements for meeting reasonably foreseeable underwater emergencies and the physiological effects of working in a hyperbaric environment.

2.1 Diving can be a dangerous work activity and there are specific Regulations in relation to diving at work in order to manage the risks. The Diving Regulations apply to any diving project in which a person who dives is at work. They cover all dives when one or more divers are at work, whether employed or self-employed. The Regulations apply to anyone whose acts or omissions could adversely affect the safety of the dive - from the client who commissions the diving project to the diver undertaking the work. All persons involved have a responsibility to take measures to safeguard the safety, health and welfare of everyone taking part in the diving project. Further information is available on the diving section of the Health and Safety Authority's website at https://www.hsa.ie/eng/Your_Industry/Diving/.

2.2 To accompany the Diving Regulations, there are two associated Codes of Practice:

- The Code of Practice for Inland Diving and Inshore Diving
- The Code of Practice for Offshore Diving

2.3 Under Regulation 17(1)(a) of the Diving Regulations, a diver must not dive in a diving project unless they are fit to do so and have a valid certificate of medical fitness to dive. This requirement includes any diver or person who is likely to be subject to hyperbaric conditions as routine rather than in an emergency.

2.4 This certificate of medical fitness to dive is issued by a "medical examiner of divers" in accordance with Regulation 19 of the Diving Regulations. The certificate indicates that the person named in the certificate is fit to dive. The certificate may be issued subject to conditions or limitations as to the nature or method of diving that may be undertaken by the person to whom the certificate relates.

2.5 All trainee divers must have a medical examination and hold a certificate of medical fitness to dive before they commence diver training. Thereafter divers must have an annual medical examination, unless the AMED is of the opinion that a shorter period is required. The certificate is valid for up to 12 months and must be renewed before it expires if the diver wishes to continue diving at work.

2.6 It is a legal requirement under Regulation 17(4) of the Diving Regulations that a diver must not take part in a diving project if unfit to do so and should immediately inform the diving supervisor should they become unfit to dive during a diving project. If the diver knows of anything, including any illness or medical condition, which makes them unfit to dive they must make this known.

2.7 In order to undertake medical examinations and fitness assessments under the Diving Regulations, the medical practitioner must have a valid Certificate of Approval issued by the Health and Safety Authority. This authorises the medical practitioner to conduct medical examinations under the Diving Regulations for a stated period.

3.1 Divers who dive for work purposes must be medically and physically fit to undertake their work. The medical examination has two aims. It should enable AMEDs to identify those medical conditions that might exclude an individual from diving for work purposes (either permanently or temporarily) or require further medical assessment. It should also assess the functional capacity of the diver to undertake their work safely. The diver should not suffer from any medical condition which would increase the probability of their safety or that of other members of the diving team in the water being compromised. In addition, the diver must not suffer from any medical condition which might be aggravated by diving, leading to the increased probability of long term health problems.

3.2 Applying the standards and guidelines set out in this document will help achieve these aims and promote a consistent approach to fitness assessments. They are based on scientific evidence and consensus expert opinion. Not withstanding this, the AMED still has discretion in applying the standards and guidelines to the diver and in doing so can take account of factors such as the method of diving, the depth of the diving, the location of the diving and the type of work being carried out. Where discretion is used, conditions and restrictions will be applied to the certificate of medical fitness to dive.

3.3 The document specifies medical conditions that are an absolute contraindication to diving or require further medical assessment and those where a diver may be considered fit to dive or fit to dive with restrictions. It does not cover all conditions that divers may present with or that may be identified at their medical. In such cases, AMEDs should obtain additional advice as required.

3.4 If there is doubt about an individual's fitness to dive, AMEDs should seek appropriate specialist advice and adopt a risk-based approach in each case. The United Kingdom Diving Medical Committee (UKDMC) and other specialist dive centres in the UK may be of assistance in providing specialist advice. The risk assessment should consider any specialist advice obtained, relevant history and examination findings, test results, and the type of diving and working conditions. Performing a risk assessment, supported by the standards and guidelines in this document, allows AMEDs to use discretion in making a justifiable, informed judgement on fitness to dive.

4.1 AMEDs must have knowledge of different methods and types of diving, diving work environments, diving physiology/pathophysiology and fitness to dive. They must keep up to date with relevant developments and have a good understanding of the different types and methods of diving at work and their hazards and risks, in order to inform decisions on fitness to dive. Therefore, practical experience of diving would be advantageous.

4.2 AMEDs must retain overall responsibility for the medical examination, even where they delegate certain aspects (for example, spirometry) to other suitably trained and competent staff (for example, nurses or occupational health technicians). The AMED must undertake the physical examination of the diver and is ultimately responsible for assessing their fitness to dive.

4.3 The role of the AMED is to:

- conduct medical examinations and fitness to dive assessments with reference to the standards and guidelines in this document,
- identify medical conditions that may present a risk to the diver and others involved in a diving project, and determine whether the diver has the functional capacity to undertake the work,
- consult where there is doubt about fitness to dive (paragraphs 7.12 – 7.13) and perform a risk assessment to determine a diver's fitness, taking account of the diving activity to be undertaken,
- determine whether the diver is fit to dive, fit to dive with restrictions or unfit to dive,
- issue a certificate of medical fitness to dive which clearly states the AMED's decision on fitness (paragraphs 7.14 – 7.19),
- remind the diver of their legal obligation not to dive in a diving project if they know of anything that would make them unfit to dive (paragraphs 2.3 and 2.6), and
- provide divers with information on the potential health effects of diving.

5.1 To gain Health and Safety Authority approval, doctors must undertake specialised training in diving medicine. This training is generally carried out in the United Kingdom at the doctor's own expense. The training must be refreshed at least once every five years to maintain AMED status.

5.2 Doctors who wish to apply to become an approved medical examiner of divers must:

- Have their names included in the Medical Register of the Medical Council of Ireland
- Have attended a course in underwater medicine of at least five days duration covering the following subjects:
  - Diving techniques and equipment
  - Diving physics and physiology
  - Inert and metabolic gas physiology
  - Decompression theory, decompression illness and barotraumas
  - Immersion and near drowning
  - The ear and diving
  - Assessment of fitness to dive
  - Radiology and bone necrosis
  - Principles of treatment of diving related illness
- Complete the application form (Appendix 1) and submit it to the Health and Safety Authority, Metropolitan Building, James Joyce Street, Dublin 1, D01 K0Y8

5.3 On receipt of the application, the doctor's equipment and facilities (see Appendix 2) which will be used for conducting the diving medicals will be audited by the Health and Safety Authority (or its representative) to ensure suitability.

5.4 The details of doctors who are approved to carry out medicals on divers in Ireland and publicly available to carry out such medicals, will be published on the Diving Section of the Health and Safety Authority's website at www.hsa.ie.

5.5 Approval as a medical examiner of divers is valid for five years. Re-approval will be required after five years (see paragraphs 6.1 – 6.3).

6.1 Re–approval of doctors as medical examiners of divers will be required after a period of five years. Re–approval will be conditional on the doctor having:

- attended an appropriate revision course not later than five years following their initial (introductory) course. These revision courses should be of at least two day's duration and include updates on the subjects specified in paragraph 5.2, and
- submitted an annual return of the numbers of divers examined by them at the end of each calendar year, on the form at Appendix 3, to the Health and Safety Authority, Metropolitan Building, James Joyce Street, Dublin 1, D01 K0Y8.

6.2 Where the Health and Safety Authority is of the opinion that the competence of a particular medical examiner of divers remains acceptable, it may make an exception as regards the length of time within which the revision course referred to above, needs to be undertaken.

6.3 Re-approval is for a period of five years.

7.1 When diving using recognised recreational diving qualifications, the diver may have had a medical examination as required by their recreational diving organisation. The AMED must take steps to validate the results of this examination with the pracititioner who carried out the investigation. The AMED can use discretion to decide if some investigations already undertaken need repeating, taking account of the diver's medical history, current health status and time elapsed since the last recreational medical examination. If information from a previous medical is unavailable, incomplete or not current, the AMED should repeat the investigations.

Initial Medical Examination

7.2 Anyone considering carrying out diving for work for the first time should initially complete a medical questionnaire to determine whether anything in their medical history would preclude them from diving (see the separate guide ***Guidance for Divers on Medical Certificates of Fitness to Dive*** for the questionnaire). On completion, the questionnaire responses need confirmation from the individual's General Practitioner (GP). The GP is not required to conduct a physical examination to confirm the medical history. Any costs incurred are the responsibility of the prospective diver. In the very exceptional circumstance where the individual does not have an attending physician or GP equivalent, the AMED should ask them to complete and sign the medical questionnaire as a self-declaration, having gone through it with them.

7.3 The diver should provide the AMED with the completed medical questionnaire. The presence of a disqualifying medical condition at this stage may avoid the expense of proceeding to a full initial medical examination. This requirement for a completed medical questionnaire also applies to divers seen by an AMED for the first time, where they had a previous medical examination with another AMED but cannot provide evidence of the outcome of that medical.

7.4 Candidates should be advised of the need for a good level of physical fitness to become a diver and the requirement to successfully complete an exercise test as part of the medical examination. They can then consider whether they are likely to meet the appropriate level of physical fitness.

7.5 Before considering a commercial diver training and/or assessment course, all potential trainees must undergo an initial medical examination with an AMED. This initial, comprehensive medical is particularly important. Appendix 4 summarises the routine investigations to perform. The AMED must make candidate divers aware of any medical problems that may affect their long-term health or future diving employment prospects. They must record the initial test results on the diver's medical record (see Appendix 5) for comparison with subsequent annual medical assessments. Use of the Diver's Medical Record form, is convenient for recording and comparing examination findings and test results over time.

Annual Medical Examination

7.6 At intervals not exceeding 12 months, all divers covered by the Diving Regulations must see an AMED who will assess their fitness to dive at work for the following 12 months. Appendix 4 summarises the routine investigations to perform. In addition, the diver should be asked if they have had any relevant health issues since their previous medical. The AMED should base their judgement of fitness on careful assessment of any medical condition in relation to the safety of the diver and the work activities they will perform. The AMED should view the diver's personal log-book to see if there have been any adverse incidents, for example, treatment of decompression illness.

7.7 The diver's medical record from the most recent examination needs to be available for comparison at each successive examination. The minimum requirement is for divers to produce a copy of their last diver's medical record at the time of their annual medical assessment unless they return to the AMED who conducted the previous medical examination. Without a previous diver's medical record, the AMED should treat the medical as an initial examination.

Return to Work Medical Assessment

7.8 Any condition or injury occurring during a diver's work may influence their continued fitness for diving work. Under certain circumstances, following illness or injury, a diver must undergo re-examination by an AMED to assess their fitness to return to work. For example, any pulmonary, cardiac, neurological or otological disorder, including decompression illness, or any condition requiring the diver to be off work for more than 14 days. Divers have a legal obligation not to dive if they know of anything that would make them unfit to dive.

7.9 A return to work medical assessment requires specific examination of the possible effects of the particular illness or injury on diving safety and the ability to undertake diving work. It does not replace the requirement for an annual medical examination.

7.10 Return to work following decompression illness (DCI) requires careful consideration. The relationship between a patent foramen ovale and other right-to-left shunts, and neurological, vestibular, cutaneous and cardiorespiratory DCI, is now well established. Therefore, any diver who has suffered these requires specialist assessment. This is particularly important where the dive profile was not obviously contributory, since it may be pertinent to an assessment of the overall risk to the diver of continuing to dive. Consultation with the specialist and if necessary the treating hyperbaric physician, will assist in making decisions about fitness to dive and the timing of return to diving work.

7.11 Any diver with a history of immersion pulmonary oedema requires assessment by a cardiologist before returning to diving, and in most cases return to diving will not be permitted.

Second Opinion and Additional Advice

7.12 AMEDs should reach a conclusion about fitness to dive. Where doubt exists, they should consult with other AMEDs and/or appropriate medical specialists. For chronic conditions (for example, diabetes or asthma) where there is a likelihood of change over time, to assess fitness to dive the AMED should obtain relevant information from the medical doctor responsible for the individual's clinical care.

7.13 AMEDs should follow current best practice on medical confidentiality and the requirements of the Data Protection Acts 1988 to 2018 and associated regulations.

Certificate of Medical Fitness to Dive

7.14 On completion of the initial or annual examination, the AMED must issue the diver with a certificate of medical fitness to dive. The certificate must indicate whether or not the diver is fit to dive, and if fit state:

- the period (which must not exceed 12 months) during which the person issuing the certificate considers the person named in the certificate will remain fit to dive, and
- any other limitations as to the nature or category of diving to which it relates.

7.15 For practical purposes, where the AMED conducts an annual medical assessment less than one month before the current medical certificate expires, the date of the new certificate may begin from the expiry date of the current version. The period from the expiry date of the current certificate to the expiry date of the new certificate must not exceed 12 months. The certificate must not be extended beyond this period for any reason.

7.16 When filling in the diver's medical record, the AMED should complete each section of the clinical assessment in as much detail as possible. They should give a copy to the diver and retain the original in keeping with General Data Protection Regulation (GDPR) requirements. If necessary, the AMED can keep separate clinical records where there is additional medical information beyond that recorded on the diver's medical record.

7.17 Options exist for restricting certification of diving activities based on duration of certification, type and remoteness of diving, and frequency and depth of diving. Such restrictions require careful consideration. It is important to ensure they are appropriate to the underlying medical condition and type of diving undertaken. They must not unnecessarily restrict employment opportunities. Where an AMED identifies any restrictions, they must record them on the certificate of medical fitness to dive at the time of issue.

7.18 Where an individual is found to be unfit to dive or fit to dive with restrictions, the AMED should inform them of the reason for their decision.

7.19 Forging or using a document with the intent to deceive, such as a medical certificate of fitness to dive, are offences under the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005). If AMEDs become aware of a forged medical certificate of fitness to dive, they should notify the Health and Safety Authority.

Gender

8.1 Generally, the same fitness criteria apply to both male and female divers. However, due to the possible harmful effects that exposure to increased pressure may have on a foetus, a diver who is pregnant or suspects she might be pregnant should not dive.

Age

8.2 There is no lower or upper age limit for medical fitness to dive. However, for young persons (persons who have reached 16 years of age but are less than 18 years of age) who are considering diving for work purposes, a risk assessment will be required under Chapter 1 of Part 6 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2016 (commonly known as the Protection of Children and Young Persons Regulations). A diver must retain the physical and functional capacity to undertake work underwater even if offset by greater experience. This will normally require greater than average fitness as age increases.

Medication

8.3 Medical fitness to dive when using medication depends on:

- the type of diving,
- underlying pathology (physical and/or psychological),
- the effects of medication, taking into account the physiological effects of diving, and
- the consequences of its abrupt cessation during diving activities.

8.4 The assessment must include the underlying condition for which the individual is taking medication. This may be the most important factor. The extent of organ function and symptom control with medication use, are also relevant. The assessment should include the length of time the individual has been on medication (for example, adaption to side effects) and the consequences of treatment cessation in the event of its loss. It should consider the potential for unexpected side effects resulting from interaction with increased pressure.

Smoking

8.5 Divers should be discouraged from smoking, although it is not a bar to diving. However, smoking related diseases, such as chronic obstructive pulmonary disease, ischaemic heart disease and peripheral vascular disease, may disqualify.

Disability

8.6 Given the enormous range of disabilities and functional loss that may be present in prospective or existing divers, it is not possible to give definitive advice. Each disability will present with a unique set of characteristics that will need a detailed and individual risk assessment. Issues to consider include effects of any medication, functional loss and adaptations and whether the condition is progressive or associated with remissions and relapses.

8.7 The AMED must consider the safety of the diver and others involved in the diving project. There may be additional risks to divers going to the aid of another diver who is in difficulty.

8.8 The decision on fitness to dive at work should take into account the requirements of the Employment Equality Acts 1998-2015. Restrictions to diving must be justifiable.

Infection and impaired immunity

8.9 A diver with a communicable disease, including sexually transmitted disease, may start diving once the underlying condition is resolved. See paragraph 8.10 for information on HIV. In cases of doubt about fitness after such an illness (for example, the presence of complications), the AMED must withhold the certificate of medical fitness to dive until they consult the doctor involved in the clinical care of the individual.

8.10 A positive HIV test need not preclude diving. Development of any new medical condition in an HIV positive individual will require re-assessment of fitness. If signs and symptoms of AIDS emerge, the diver is likely to be unfit to dive. However, the AMED should consider such cases on an individual basis and obtain specialist advice as appropriate.

8.11 A diver with impaired immunity for other reasons, such as splenectomy or immunosuppressive treatment, needs careful consideration. It may require a restriction on the type of diving undertaken. The risk of infection, even with prophylactic antibiotic use and access to medical care, needs assessing in relation to foreign travel, diving in microbiologically contaminated water and working in saturation conditions.

Malignancy

8.12 A malignant condition and any treatment side effects should be assessed on an individual basis and will require information from the doctor responsible for the individual's clinical care. Any individual found fit to dive is likely to need regular review.

Obesity

8.13 Obesity can have a negative impact on physical fitness and is associated with long-term disease (for example, cardiovascular disease, hypertension and type 2 diabetes). It also has practical implications for diver safety (for example, fit of equipment and the capacity to access and undertake work in confined/restricted spaces). The impact of obesity on an individual's ability to dive safely should be considered in the context of aerobic fitness and any potential functional restriction.

8.14 At each medical examination, the AMED must measure and record the diver's height, weight and waist circumference, and calculate Body Mass Index (BMI, in kg/m^2). There is no requirement to estimate body fat using callipers or bioimpedance.

8.15 BMI is a population measure, traditionally used to identify individuals most likely to be overweight or obese. High values generally indicate excessive body fat and increased health risk. However, BMI is a less accurate measure of adiposity in adults who are highly muscular. Waist circumference is a simpler measure and better predictor of body fat and future health risk. To help interpret results, AMEDs should refer to the guide in Figure 1 (page 17).

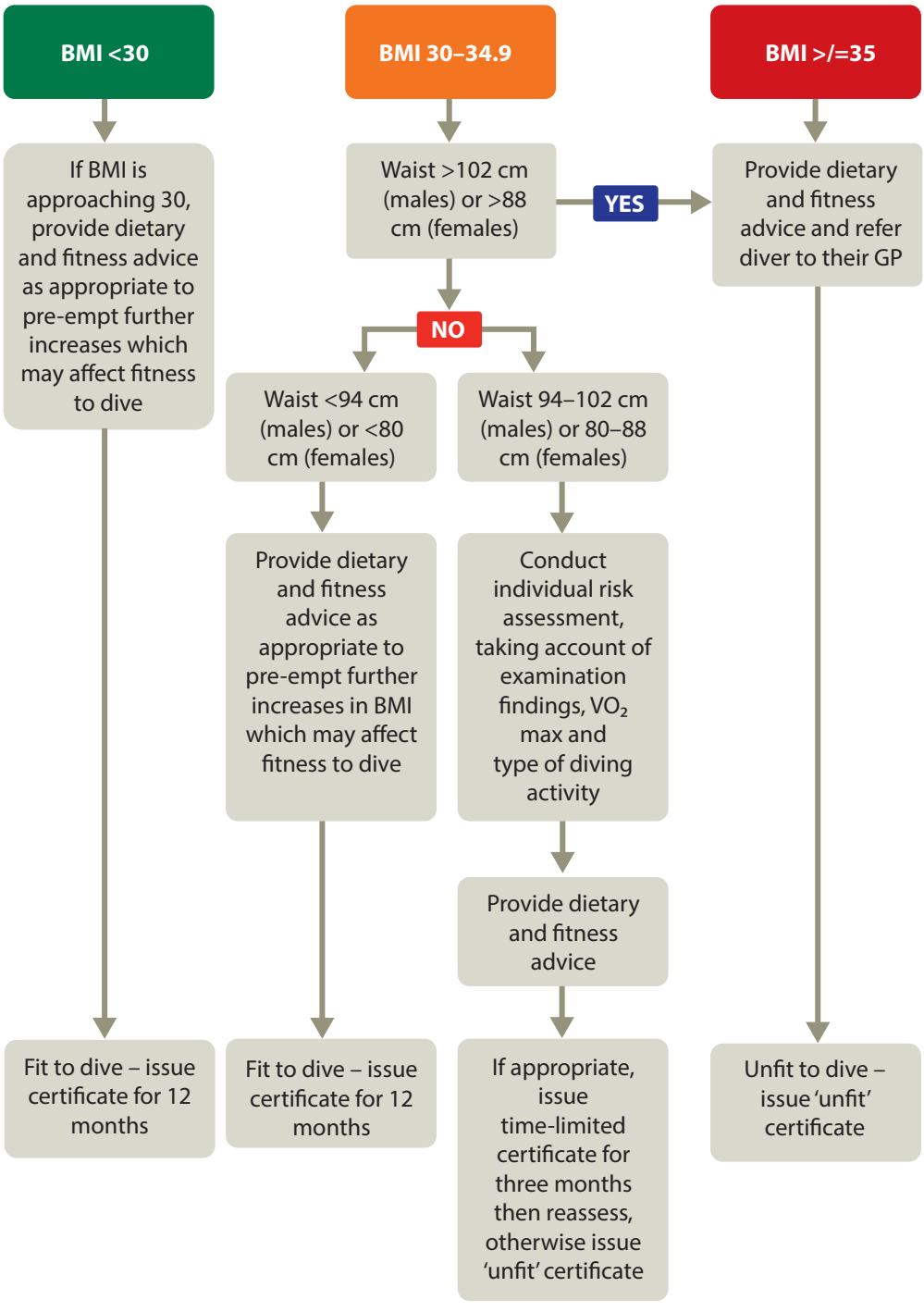

Figure 1: Flow chart to aid interpretation of BMI and waist circumference measurements

9.1 The AMED must consider the risk to the diver's safety and the safety of those around them, taking into account the risk of recurrence of psychiatric or psychological disorders. They should pay particular attention to the various stresses associated with the type of work, remote location and risks involved.

9.2 Individuals should be free from psychiatric symptoms and cognitive impairment. They should not be suffering from psychological or personality issues that would interfere with their in-water safety or that of others. Particular attention should be paid to anxiety disorders due to the clear link between anxiety/panic and diving accidents.

9.3 The diver must be psychologically capable of undertaking diving activity. The diver's manner, attitude, verbal and intellectual responses form part of the examination. Where any doubt exists, a specialist psychological opinion may be required.

9.4 Some disorders, if symptomatic, would exclude an individual from all types of diving. They are:

- schizophrenia,
- bipolar affective disorder, and
- recurrent depression.

9.5 When the above disorders are asymptomatic due to treatment, the AMED must explain why they are not satisified to deem the person fit. The AMED should advise the individual of what they need to do, for example, obtain a specialist opinion from a psychiatrist.

9.6 As with physical impairment, the risks associated with mental health disorders must be considered on a case by case basis. In general terms, a minimum six to 12 month period of stability is required prior to returning to diving. The side effects of medication must be considered as part of the assessment. Medications that affect concentration, alertness or impair decision-making are not compatible with safe diving. At least 12 months off psychotropic medication is required for divers working in saturation or for divers undertaking other diving deeper than 50 metres. A specialist report may be required to confirm the diagnosis and prognosis or the AMED should liaise with the treating doctor to assist in the decision.

9.7 The use of psychotropic medication (for example, SSRIs for anxiety and/or depression) is a contraindication for saturation diving or other diving deeper than 50 metres. For other types of diving where there is a continuing need for psychotropic medication, the diver must provide the AMED with a specialist psychiatric opinion.

9.8 The use of psychotropic medicine for the management of chronic pain needs individual assessment. The underlying medical condition that requires treatment and the effects of the medication need to be considered as part of the fitness to dive assessment and specialist input may be required.

9.9 A diver may be fit to dive where the following disorders do not interfere with in-water safety:

- Phobias – most simple, specific phobias would not preclude an individual from diving. However, agoraphobia and/or claustrophobia are contraindications to diving
- Severe pre-menstrual syndrome (PMS) – also known as pre-menstrual dysphoric disorder (PMDD). A diver with PMS may be passed as fit providing they are told not to dive while suffering from the effects of this disorder

Alcohol, Drug or Substance Misuse

9.10. Alcohol dependence and drug or substance misuse is incompatible with diving. As a minimum, there should be a lengthy period of abstinence (such as 12 months) off the misused substance, without medication or relapse. Obtaining a specialist report may be appropriate to confirm the diagnosis and prognosis.

10.1 The respiratory system should be clinically and functionally normal. A comprehensive respiratory history is essential and AMEDs should consider using a standardised questionnaire.

10.2 At each medical examination, the candidate must perform spirometry at rest and the AMED must record PEF, FEV1 and FVC. Significant abnormalities or changes in lung function, for example, FEV1 < 80% of the predicted value for gender, age and height (corrected for ethnicity) or FEV1/FVC ratio < 70% may require the input of a respiratory physician.

10.3 The respiratory response to the exercise test must also be recorded (see paragraphs 22.1 – 22.9). Document PEF or FEV1 at 5, 10 and 15 minutes post-exercise and consider using the Borg scale or similar to assess breathlessness in a structured manner. If PEF or FEV1 fall by at least 15% at 5, 10 and/or 15 minutes post-exercise, or if there are any other features suggestive of exercise-induced bronchoconstriction from the medical or occupational history, consult a respiratory physician.

10.4 Routine chest radiography at the initial medical examination is not required. Chest X-ray should only be performed if justified on individual clinical grounds. The AMED should consider the individual's history, findings from the physical examination and whether the potential information derived from radiography will assist in making a decision on fitness to dive. If additional assistance in interpretation is needed or imaging other than a plain chest X-ray is required, an appropriate specialist should be consulted.

10.5 If there is any doubt about respiratory fitness, the AMED must seek an opinion from a respiratory physician. Table 1 (page 22) sets out specific circumstances in which an opinion must be sought and when a respiratory condition would be a contraindication to diving without the need for further assessment.

Asthma

10.6 For assessing the asthmatic diver, AMEDs should follow the ***British Guideline on the Management of Asthma: A National Clinical Guideline*** by the British Thoracic Society/Scottish Intercollegiate Guidelines Network. Table 1 (page 22) includes information on asthma.

10.7 Individuals with asthma may be permitted to dive (where they have been assessed by a respiratory physician in accordance with Table 1), if they are on either Step 1 or 2 of the British Thoracic Society guidelines and they:

- are free of asthma symptoms,
- have normal spirometry (FEV1 >80% predicted and FEV1/FVC >70%), and
- have a negative exercise test (<15% fall in PEF or FEV1).

10.8 A diver with asthma should monitor their condition with regular, twice daily, PEF measurements and bring records of these measurements to subsequent medicals. They should be advised to refrain from diving if they have:

- active asthma (i.e. symptoms requiring relief medication in the 48 hours preceding a dive),
- reduced PEF (more than 10% fall from best values), or
- increased peak flow variability (more than 20% diurnal variation).

Table 1 - Respiratory Conditions That are an Absolute Contraindication to Diving or Require Further Assessment

Condition	Candidate unfit to dive without need for further assessment	Candidate needs further assessment by respiratory physician.	Additional guidance for specialists in secondary care
Acute respiratory disease such as pulmonary infection	All cases, until resolved with no sequelae		
Asthma	Requiring BTS Step 3 treatment and/or admitted to hospital with exacerbation in last three months; unstable asthma	Controlled on Step 1 or 2 of BTS guidelines – refer when diver is seen for the first time (initial medical) and consider re-referral if the condition subsequently changes (see paragraph 10.7)	Individuals with asthma should be found unfit to dive if they have wheeze precipitated by exercise, cold or emotion
Chronic obstructive pulmonary disease		All cases	
Cystic fibrosis	Pulmonary involvement	All other cases	
Tuberculosis	Active tuberculosis	After curative treatment, if lung function and chest radiography are normal	
Pulmonary fibrosis	Disease which reduces lung compliance and impairs gas transfer	All other cases	
Previous chest surgery; pneumomediastinum; pulmonary barotrauma; traumatic pneumothorax including cardiothoracic surgery		All cases	Candidate might be fit to dive if injury has healed and is associated with acceptable lung function and thoracic imaging
Presence of large bullae or cysts	All cases		Due to increased risk of barotrauma
Sarcoidosis	Active sarcoidosis	Resolved sarcoidosis demonstrated by normal chest radiography and pulmonary function testing	
Previous spontaneous pneumothorax		All cases	Candidate may be fit to dive if treated by bilateral surgical pleurectomy and associated with normal lung function and thoracic imaging performed after surgery
Chronic lung disease not mentioned elsewhere		All cases	

11.1 The cardiovascular system should be clinically and functionally normal and enable the diver to sustain strenuous muscle activity at depth. There should not be an increased risk of loss of consciousness or incapacitation compared with the healthy, general population.

11.2 Any organic heart disease is a cause for rejection unless considered haemodynamically unimportant by a cardiologist.

Blood Pressure

11.3 AMEDs must obtain resting blood pressure at each examination. When measuring blood pressure, standardise the environment and provide a relaxed, temperate setting, with the person quiet and seated, and their arm outstretched and supported (see *NICE Clinical Guideline on Hypertension*).

11.4 Mild hypertension (systolic BP = 140–159 mmHg; diastolic BP = 90–99 mmHg) would not be a contraindication providing that:

- either no medication is required or the medication taken has no implications for diving safety, and
- there is no evidence of end organ damage.

11.5 Where doubt exists, the AMED must seek a specialist cardiology opinion.

Electrocardiography (ECG)

11.6 An ECG is not required at initial or annual medical examination unless clinically indicated. Where an AMED obtains an ECG, they should discuss any abnormality with a cardiologist.

Ischaemic Heart Disease

11.7 Symptomatic ischaemic heart disease is incompatible with diving. The requirement for medication to control symptoms is a contraindication but preventive medication such as aspirin or lipid lowering agents is acceptable.

11.8 At the initial examination, an individual found incidentally to have ischaemic heart disease needs further assessment by a cardiologist.

11.9 An individual who is symptom free following conventional coronary bypass surgery, percutaneous coronary intervention (angioplasty) or minimally invasive surgical revascularisation, requires detailed specialist cardiac assessment, including an exercise stress test by a cardiologist (also see Table 1 for traumatic pneumothorax including cardiothoracic surgery).

Dysrhythmia

11.10 Any dysrhythmia that might cause incapacity in water will disqualify.

11.11 Disorders of cardiac rhythm, except for infrequent ventricular extrasystoles, require evaluation by a cardiologist and are likely to be a cause for rejection. Sinus arrhythmia is normal in young people.

Pacemaker

11.12 In most cases, the indication for pacing is likely to be a contraindication to diving. The individual requires careful assessment with consideration of the type of diving and type of pacemaker, and with input from a cardiologist.

Patent Foramen Ovale (PFO)

11.13 Examination for the presence of an intracardiac shunt is not a requirement of either the initial or annual examinations.

11.14 However, the relationship between a PFO and other right-to-left shunts, and neurological, vestibular, cutaneous and cardiorespiratory DCI, is now well established. Furthermore, migraine with aura is associated with an increased prevalence of a large PFO and other right-to-left shunts and therefore an increased risk of DCI. Any diver who has suffered these should be assessed by a cardiologist (see paragraph 7.10). This is particularly important where the dive profile was not obviously contributory, since it may be pertinent to an assessment of the overall risk to the diver of continuing to dive.

Valvular Heart Disease

11.15 Auscultation of the heart should be normal. Murmurs are acceptable only if deemed physiological or haemodynamically unimportant. Evidence of valvular heart disease requires assessment by a cardiologist.

11.16 Congenital heart disease, even if repaired surgically or by interventional techniques, requires assessment by a cardiologist.

Peripheral Circulation

11.17 The peripheral circulation should be capable of providing adequate peripheral perfusion even in cold conditions. Evidence of impaired circulation, either on history or examination, requires further evaluation. Peripheral vascular disease may predispose to cold injury. Contraindications include:

- varicose veins associated with circulatory impairment (for example, varicose eczema); and
- conditions known to be associated with impaired organ perfusion.

12.1 The central nervous system should be clinically and functionally normal. Assessment of the central nervous system is one of the most important elements of the initial and annual medical examinations.

12.2 Assessment of central nervous system function includes both physical and psychological aspects (see paragraph 9.3).

12.3 A careful history is essential. The AMED should specifically seek a history of visual, hearing, speech, swallowing, motor, sensory, balance, coordination, bladder, bowel and sexual dysfunction. A history of predisposition to episodes of impaired consciousness or awareness, convulsions and disturbances of speech, vision or motor control, are incompatible with diving. The AMED must look for and exclude conditions that may mimic decompression illness or jeopardise safety.

12.4 The neurological examination should be detailed and include assessment of cranial nerve function, the motor and sensory systems, balance, coordination, gait, proprioception, vibration sense and two-point discrimination. Deep tendon reflexes and plantar responses should be elicited. The AMED should record the baseline clinical findings in detail on the diver's medical record to allow detection of any subsequent variation.

12.5 The following are contraindications to diving:

- Any form of seizure activity, other than febrile convulsions occurring before the age of five years. However, if a diver remains seizure free for 10 years without medication or treatment, they may be fit to dive but will require assessment by an appropriate specialist/neurologist
- Recurrent, unprovoked loss of consciousness of unknown aetiology or recurrent episodes of fainting
- Severe motion sickness
- Severe migraine (frequency and symptoms), particularly with excess daytime somnolence

12.6 Neurological diseases such as stroke, multiple sclerosis or Parkinson's disease should be considered on an individual basis and will require a specialist neurology opinion.

12.7 Following a stroke or transient ischaemic attack (TIA), a diver requires at least 12 months without further problems to be considered fit to dive. An opinion from a neurologist would be necessary. The possibility of other cardiovascular pathology must be investigated and excluded.

12.8 A history of previous intracranial surgery is not an absolute contraindication to diving providing there is no history of subsequent epilepsy, increased risk of seizure or persisting neurological deficit. The reason for intracranial surgery is often the more important factor when assessing epilepsy risk. Where required an appropriate specialist assessment (neurology or neurosurgical) may be required.

12.9 A history of moderate to severe head injury carries a risk of post-traumatic epilepsy. The epilepsy risk assumes significance when there has been a depressed skull fracture, intracranial haematoma, unconsciousness or post-traumatic amnesia greater than 30 minutes, or when focal neurological signs have accompanied the injury. Post-traumatic amnesia is taken from the time of injury until the point from which there is continuous recall.

12.10 Mild episodes of head injury (less than 30 minutes unconsciousness or post-traumatic amnesia) provide grounds for temporary unfitness for a period of four–six weeks, subject to a review by an AMED. However, mild head injuries may lead to persisting post-concussional symptoms and divers should not return to diving work until these have resolved.

13.1 The diver must have the appropriate degree of mobility, strength and dexterity for the diving activities and work undertaken. Musculoskeletal problems require a careful and individual risk assessment.

13.2 Divers with a history of low back pain require careful assessment because of the risk of sudden incapacitation and sciatic pain mimicking decompression illness.

13.3 Routine long bone X-rays are not required for surveillance of divers. Long bone radiography and/or magnetic resonance imaging (MRI) is indicated in cases of suspected dysbaric osteonecrosis.

14.1 Hearing that allows understanding of normal conversational voice is adequate for all types of diving at work. If there is any doubt, a risk assessment should be conducted, taking account of relevant factors, including the diver's ability to communicate and respond to warning signals and the type of diving. Initial examination requires an audiometric assessment covering the range 500 Hz–6 KHz. An audiogram should be repeated after an episode of aural barotrauma or where required as part of a hearing health surveillance programme. Saturation divers may need regular follow up.

14.2 The ear canal must be free from obstruction such as wax. Narrowing of the ear canal, caused by exostoses for example, should not prevent diving unless severe enough to limit or impede ear equalisation.

14.3 The tympanic membrane must be intact. Movement of the tympanic membrane should be seen on performing a Valsalva manoeuvre. If there is any doubt that eustachian tube function is hindered, refer the diver for a tympanogram.

14.4 The following are contraindications to diving and may require advice from an Ear, Nose and Throat (ENT) specialist:

- Previous stapedectomy
- Active Ménière's disease or other vertiginous conditions
- Any active infection of the ear canal or middle ear until resolved
- Cases of chronic ear canal or middle ear disease, such as cholesteatoma
- Any mastoid surgery that has removed the posterior ear canal wall
- After middle ear barotrauma until all symptoms and signs have fully resolved

14.5 Scarred tympanic membranes or healed perforations do not prohibit diving as long as individuals have intact tympanic membranes and normal eustachian tube function.

14.6 The nose should be clear with no obstruction. Any nasal or sinus symptoms should be treated appropriately. Acute infection of the nose/sinuses is a contraindication to diving and should be treated appropriately. Once resolution has occurred and the nose is clear, the individual can dive. Chronic nasal and sinus conditions may be treatable. Providing this is successful, the individual can dive. A requirement for oral or topical medications, such as decongestants, antihistamines or steroids, requires careful consideration and advice from an ENT specialist.

14.7 Nasal obstruction caused by a deviated nasal septum or nasal polyps is amenable to medical or surgical treatment. After successful treatment, the individual can dive.

14.8 Any condition causing an incompetent larynx is a contraindication to diving as is the presence of a tracheostomy. A laryngocele is also a contraindication until corrected surgically.

15.1 Visual acuity, with or without correction, and colour vision must be adequate for the type of diving activity. For distance, combined visual acuity of 6/9 in both eyes is likely to be adequate. The requirement for near vision should consider the need to read a watch, computer, depth gauge, tables and instrumentation. Colour vision is important for specific inspection tasks. Appropriate colour vision screening and confirmatory functional tests should be used, if needed.

15.2 Divers requiring optical correction can use a prescription faceplate if using a facemask. Soft, gas permeable contact lenses are suitable while hard, impermeable lenses are unsuitable unless fenestrated. There is a risk of infection with all contact lenses and it may be difficult to maintain sterility in a saturation environment. Use of disposable lenses may reduce this risk.

15.3 The risk associated with diving after ophthalmic surgery requires careful evaluation and individual assessment in conjunction with the surgeon. Certain procedures may involve the instillation of gas into the globe and individuals should not dive until all gas is reabsorbed. Experience to date has not demonstrated difficulties for divers following radial keratotomy.

16.1 Divers require a high standard of dental health. It is necessary to retain a mouthpiece and the presence of dental cavities may be associated with barotrauma. Unattached dentures should be removed during any diving activity.

16.2 Divers should see a dentist at least annually and more frequently if symptomatic. In cases of doubt about dental health, a certificate of dental fitness should be obtained.

17.1 Diving results in numerous neurological reflexes and hormonal responses. It is unlikely that those suffering from endocrine conditions leading to impaired thermoregulation or cardiac or muscular insufficiency, would be found fit to dive. A proven or suspected abnormality requires detailed assessment.

Diabetes

17.2 The detection of glycosuria requires investigation. Any diver with diabetes mellitus (DM), whether insulin, tablet or diet controlled, should attend a specialist endocrinologist or a medical doctor with a specific interest in diabetes for detailed individual assessment (see paragraph 7.12).

17.3 When assessing fitness to dive in an individual with diabetes, consider the nature of the work and diving environment, the degree of control achieved by treatment and safety of the diver and others on the diving project. Regular (at least annual) appropriate medical review is required and the individual should be well motivated and educated in relation to their diabetes care. It is unlikely that an individual with diabetes would be fit for saturation diving.

17.4 Evidence of poor control with hypoglycaemic or hyperglycaemic episodes is likely to lead to disqualification. The presence or development of diabetic complications such as atherosclerosis, cardiomyopathy, proliferative retinopathy, peripheral vascular disease, diabetic foot syndrome, nephropathy or neuropathy, will disqualify.

Thyroid Disease

17.5 Patients with thyroid disease who are in a stable state (such as treated thyrotoxicosis or hypothyroidism) may be fit to dive providing they have no cardiovascular complications of the disorder. Gross thyroid disease is a contraindication to diving. However, on replacement therapy, stable hypothyroidism can be compatible with diving at work even when one or two doses of thyroxine are missed.

Other Disorders

17.6 Use of cortisol replacement for whatever reason is a contraindication to diving because of the risk of collapse associated with illness, injury or stress.

17.7 Divers with any other endocrine disorder or those receiving systemic steroid therapy must be referred to an endocrinologist and the results discussed with a specialist for detailed individual assessment.

18.1 Initial and annual medical examinations must include dipstick urinalysis for blood, protein and glucose. Abnormal results require investigation.

18.2 A history of renal disease or urinary tract investigation requires more detailed assessment. The presence of genitourinary or renal tract disease associated with abnormal renal function is usually a cause for rejection. Cases of renal calculi and colic should be assessed on an individual basis after specialist investigation.

18.3 If the history suggests prostatic disease, this should be carefully evaluated. The occurrence of acute retention would be a particular problem for saturation divers.

19.1 Gastrointestinal function should be normal with no increased tendency to vomiting, dyspepsia, reflux, bleeding, perforation, diarrhoea or pain. Hepatic function should be clinically normal.

19.2 Active inflammatory bowel disease, gall bladder pathology and pancreatitis are contraindications to diving. Quiescent disease would require a specialist opinion. The presence of an abdominal wall hernia is a contraindication until repaired. Dyspepsia requires investigation. Gastrointestinal surgery which results in the potential for gas trapping, requires an opinion from the surgeon.

19.3 A previous history of peptic ulceration requires careful assessment. Active peptic ulcer disease is not acceptable for diving. If an individual has peptic ulceration that is kept under review and is quiescent with medication, they may be fit to dive.

19.4 The presence of a stoma is likely to be compatible with limited types of diving activity. The AMED may need to obtain advice from the individual's surgeon.

20.1 The skin barrier should be functionally intact and without increased susceptibility to infection.

20.2 Any condition that may affect thermal control is a contraindication. Prolonged periods in water and exposure to high humidity, especially in saturation environments, increase the risk of disabling skin infection and can exacerbate many pre-existing dermatoses. Severe exfoliative disorders are contraindications. Acute or chronic infections are a cause for temporary unfitness until controlled.

21.1 There is no requirement for a full blood count at initial or annual medicals and no need for a sickle cell test, unless clinically indicated.

21.2 Sickle cell anaemia (HbSS), other sickle cell disorders (including HbSC, HbSD, HbSO and HbS beta thalassaemia) and thalassaemia major are contraindications to diving. Carriers of sickle cell or thalassaemia trait are not believed to be at significantly increased risk during diving and may therefore be fit to dive.

22.1 Professional diving can be very demanding, both physically and mentally, and divers need a good level of physical fitness. This is particularly important for underwater emergencies where a diver may need to rescue a colleague. At initial and annual medical examinations, AMEDs must conduct an exercise test to assess cardiorespiratory fitness. They can then provide feedback to the diver on their physical fitness and it serves as a health promotion tool to remind the diver to keep fit.

Safety

22.2 Before proceeding to an exercise test, the AMED should conduct an assessment of the risk and suitability of undertaking the test. This should take account of the diver's medical history, examination findings, investigation results, general fitness and the presence of any cardiac risk factors. Appendix 6 contains a cardiac screening tool that the AMED can use.

22.3 Those undertaking exercise testing of divers should have up to date training in basic life support and resuscitation skills following the ***European Resuscitation Guidelines***. Resuscitation equipment (for example, an automated external defibrillator (AED)) should be provided, depending on the findings of the risk assessment. There should be a clear procedure to follow in the event of a collapse. AMEDs should consider the approach in the ***European Resuscitation Guidelines*** for cardiopulmonary resuscitation and training.

Testing

22.4 At each initial and annual medical, AMEDs should perform a Chester Step Test (CST) to estimate the maximal oxygen uptake (VO_2 max). This is a measure of aerobic capacity and cardiorespiratory fitness. Other methods for evaluating VO_2 max are available, each with its limitations. The CST has several advantages. It requires minimal equipment, is inexpensive, is relatively easy to perform and standardise, and requires little skill from the participant.

22.5 The measurement error associated with the CST is around 12–15% but accuracy of the results can be improved by careful standardisation of pre-test conditions and test procedures. Therefore, it is important AMEDs adopt a standardised approach when following the appropriate protocol for performing the test and estimating VO_2 max. When properly conducted, the CST is reliable on a test-retest basis, reasonably valid for estimating aerobic capacity and suited to monitoring changes.

22.6 Working divers should be able to achieve a minimum VO_2 max of 45 ml/kg/min (see Figure 2 page 38). This is equivalent to an energy expenditure of 13 METS (metabolic equivalent of task).

22.7 If there is doubt about the accuracy of results from the CST for a particular diver, the AMED should consider whether an alternative test for estimating VO_2 max would be appropriate. Suitable tests could include a Treadmill Test or Multi-Stage Shuttle Run Test. A maximal exercise test requiring the subject to exercise to the point of exhaustion should only be undertaken after a careful and detailed assessment of the risk and suitability of performing the test (see paragraphs 22.2 – 22.3). In addition, the individual may require close monitoring while undertaking the test.

22.8 Although the CST is essentially a functional test, measuring PEF or FEV1 before, and 5, 10 and 15 minutes after the test, provides a screen for exercise-induced wheeze (see paragraph 10.3).

Interpretation

22.9 To help interpret results, AMEDs should refer to the guide in Figure 2. If the result is borderline, even after repeat testing, the AMED should take account of all relevant findings and the type of diving activity to be undertaken when deciding on fitness to dive. In reaching a decision, they should document any discussions they may have had with other AMEDs and specialists before issuing a certificate of medical fitness to dive.

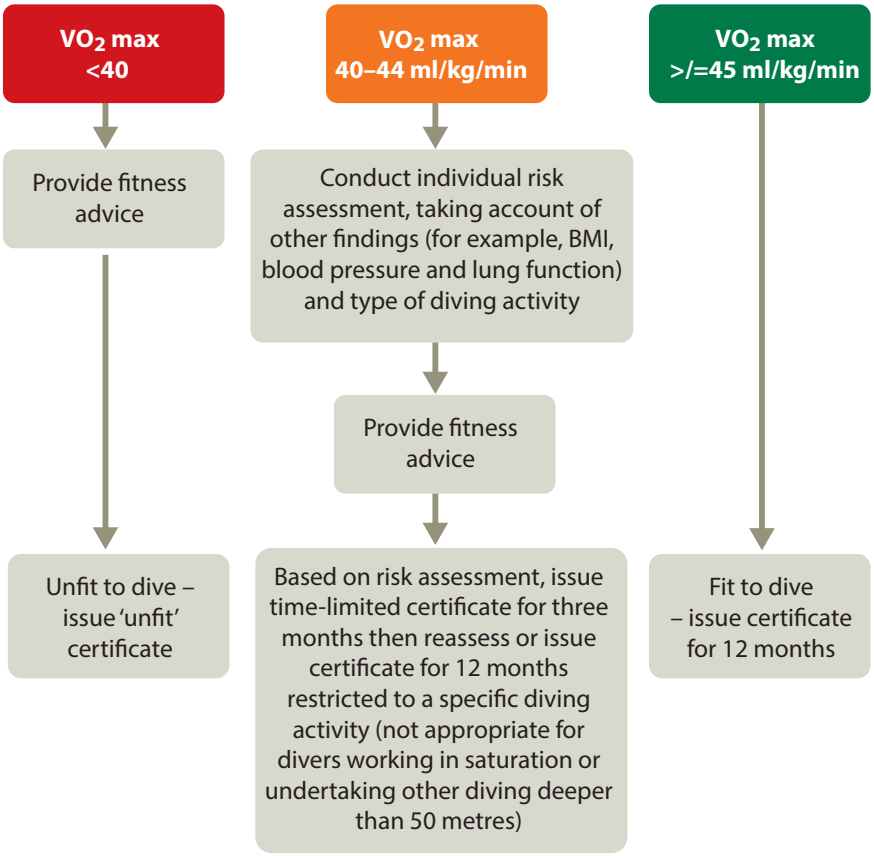

Figure 2: Flow chart to aid interpretation of VO_2 max values

HEALTH AND SAFETY AUTHORITY

Safety, Health and Welfare at Work (Diving) Regulations 2018 and 2019

Name	
Address	
Registration Number with the Medical Council	
Details of Underwater Medicine Course Attended (please attach a copy of the certificate of completion of course)	
Type of Approval Sought	☐ First Time ☐ Re-Approval

For office use only:

Employer ID.	EPOW ID.	Contact ID.	Date Received.
Comments:			

Return to:

The Health & Safety Authority, Metropolitan Building, James Joyce Street, Dublin 1, D01 K0Y8.

Form No. NDR1 **Version 1**

Equipment	Requirements
Spirometer	• Maintained, calibrated and certified on an annual basis and in accordance with manufacturer's instructions/recommendations. • Calibration records available for inspection. • User manual available.
Audiometer	• Maintained, calibrated and certified on an annual basis and in accordance with manufacturer's instructions/recommendations. • Calibration records available for inspection. • User manual available.
Electro Cardio Graph (ECG) machine	• On site or ready access to ECG. • Maintained, calibrated and certified on an annual basis and in accordance with manufacturer's instructions/recommendations. • Calibration records available for inspection. • User manual available.
Chester Step Box	• In safe working order.

Facilities

Facilities for conducting the medical examinations must be appropriate and provide:

- a safe environment for conducting examinations which meets with the requirements for the Workplace (Chapter 1 of Part 2 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2016 (S.I. No. 299 of 2007 as amended)),
- an environment which safeguards the privacy of the worker during the examination,
- suitable furnishings for conducting examinations,
- adequate levels of hygiene,
- adequate heating, lighting and ventilation, and
- hand washing facilities.

In addition, the AMED must have an up-to-date Safety Statement.

HEALTH AND SAFETY AUTHORITY

Safety, Health and Welfare at Work (Diving) Regulations 2018 and 2019

Name of Approved Doctor	
Address of Approved Doctor	
Year	
Number of Divers Examined	
Number Certified Without Conditions	
Number Certified with Conditions	
Number Rejected	

For office use only:

Employer ID.	EPOW ID.	Contact ID.	Date Received.
Comments:			

Please return as soon as possible after 31st December each year to:

The Health & Safety Authority, Metropolitan Building, James Joyce Street, Dublin 1, D01 K0Y8.

Form No. NDR2 **Version 1**

APPENDIX 4 – SUMMARY OF ROUTINE INVESTIGATIONS TO PERFORM AT INITIAL AND ANNUAL MEDICAL EXAMINATIONS

Investigation	Initial examination	Annual examination
Exercise test	Yes	Yes
BMI	Yes	Yes
Waist circumference	Yes	Yes
Spirometry	Yes	Yes
Post-exercise PEF/ FEV1	Yes	If clinically indicated
Resting blood pressure	Yes	Yes
Urinalysis	Yes	Yes
Audiometry	Yes	If clinically indicated
Chest X-ray	If clinically indicated	If clinically indicated
Resting ECG	If clinically indicated	If clinically indicated
Full blood count	If clinically indicated	If clinically indicated
Sickle cell test	If clinically indicated	N/A

HEALTH AND SAFETY AUTHORITY

This record should be retained along with any additional clinical notes.

Diver Details			
Title	Forename	Surname	Date of Birth
Address			
Eircode			
Approved Medical Examiner Of Divers'(AMED) Details			
Title	Forename	Surname	
Address			
Eircode			
Date of Examination and Signature of AMED			
	Date	Signature	
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			

Occupational History, Medical History and Examination Details
Past Diving History
Past Medical History
Medication
Allergies

	Year 1	Year 2	Year 3	Year 4	Year 5
Smoking status					
Alcohol consumption					
Height (Metres - m)					
Weight (Kilograms - kg)					
BMI (kg/m^2)					
Waist circumference					

Mental Health					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Mental health assessment					

Respiratory System					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Air entry					
Percussion note					
Added Sounds					
FEV1					
FVC					
FEV1/FVC%					
PEF (resting)					
PEF or FEV1 (5 min post-exercise)					
PEF or FEV1 (10 min post-exercise)					
PEF or FEV1 (15 min post-exercise)					

Cardiovascular System					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Pulse					
BP					
ECG (as required)					
Heart Sounds					
Murmur					
Peripheral pulses					
Varicose veins					

Exercise Testing					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Risk assessment satisfactory					
VO_2 max (ml/Kg/min)					

Nervous System					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Appearance					
Posture					
Gait					
Balance					
Coordination					
Involuntary movements					
Speech					

Cranial Nerves					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
II-XII					
Pupils					
Eye movements (including nystagmus)					

Peripheral Nerves					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Tone					
Power					

Reflexes					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Biceps					
Triceps					
Supinator					
Knee					
Ankle					
Plantar					

Sensory					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Light touch					
Pinprick					
Temperature					
Two-point discrimination					
Proprioception					
Vibration					

Musculoskeletal System					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Spine					
Upper limbs					
Lower limbs					

ENT										
	Year 1		**Year 2**		**Year 3**		**Year 4**		**Year 5**	
	R	**L**	**R**	**L**	**R**	**L**	**R**	**L**	**R**	**L**
Audiometry (as required)										
External meatus										
Tympanic membranes										
Eustachian function										
Nasal airways										

Vision										
	Year 1		Year 2		Year 3		Year 4		Year 5	
	R	L	R	L	R	L	R	L	R	L
Distance Vision										
Near vision										
Visual fields										
Fundi										
Colour vision (as required)										

Dental Health					
	Year 1	Year 2	Year 3	Year 4	Year 5
Regular dental assessments					

Endocrine System					
	Year 1	Year 2	Year 3	Year 4	Year 5
Evidence of diabetes, thryoid disease or other endocrine disorder					

Abdomen					
	Year 1	Year 2	Year 3	Year 4	Year 5
Masses/organomegaly					
Hernial orifices					
Haemorrhoids					

Urinalysis					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Protein					
Sugar					
Blood					

Skin					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Functionally intact					

Haematology					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Haemoglobin (as required)					

Overall Fitness					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Fit/unfit					
Restrictions					

Additional Findings

Form No. NDR3 **Version 1**

Question	Yes	No
If undertaken, is the resting ECG normal?		
If the ECG is abnormal, has it been previously investigated?		

Is there a history of, or evidence of:

Coronary artery disease?		
- Angina?		
- CABG?		
- Coronary angioplasty?		
Cardiac arrhythmia?		
- Implanted pacemaker?		
- Implanted cardiac defibrillator?		
Peripheral vascular disease?		
- Intermittent claudication?		
- Aortic aneurysm?		
Cardiomyopathy?		
Heart failure?		
Hypertension?		
- BP > 160/100?		
- End organ damage?		

Further Information and Guidance:

Visit our website at **www.hsa.ie**, telephone our contact centre on **1890 289 389** or email **wcu@hsa.ie**

Use BeSMART, our free online risk assessment tool at **www.besmart.ie**

Check out our range of free online courses at **www.hsalearning.ie**

HEALTH AND SAFETY AUTHORITY

Our Vision:
Healthy, safe and productive lives and enterprises

Health and Safety Authority

Tel. 1890 289 389

International Callers
00353 1 6147000

www.hsa.ie

HEALTH AND SAFETY AUTHORITY

ISBN: 978-1-84496-262-4

HSA0489