

## ADVANCED DIPLOMA OF DIVING AND HYPERBARIC EXAMINATION REPORT FOR DHM EXAM GROUP AUGUST/SEPTEMBER 2024

The DHM exam group would like to acknowledge the services of the panel members who marked written questions and conducted vivas for this exam.

<b>Name</b>	<b>Hospital</b>	<b>Exam</b>	<b>Region</b>
Neil Banham	Fiona Stanley Hospital	Chair of Examinations Written Questions	<b>WA</b>
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We acknowledge the employers of ANZCA volunteer examiners, who support them being away from their duties for the viva exam and the examiners who volunteer their own time in marking and travel to and from the exams. We also express our thanks to ANZCA Staff in Victoria (Moir Besterwitch and Shirin Noori), for their excellent operational support to run the exams successfully. We are also grateful for the support provided by local ANZCA staff in Western Australia and Tasmania for the DHM written exam.

### 2024 DHM Exam

This report is prepared to provide candidates, their teachers and supervisors of training with information about the performance of candidates in the recent examination, so that candidates may prepare appropriately for future examinations. All trainees are urged to read the questions carefully and answer the question asked. All teachers and supervisors of training are encouraged to discuss this report in detail with candidates they are preparing for future examinations.

Candidates should note that the examiner will not be reading the answer booklet in its physical form. Each answer booklet is sliced along the margins and scanned. If candidates write across two pages, or rotate the page through 90° and write along the long axis, the answer may become disjointed or difficult to read after scanning. Please note that the instructions on the answer booklet specify that you should not write in the margin.

## GENERAL

The DHM written exams were held on Thursday August 8th, 2024. The Viva voce exams were held on Wednesday 4<sup>th</sup> September 2024.

This report is to provide examiners with quality assurance feedback for the review and improvement of the exam. It has received input from all examiners who marked the written and assessed the oral exams.

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### Written Exam

The written exam had 10 short answer questions to be answered in 100 minutes, each worth 10% of the mark. The pass mark for the written exam was 25/50. The written exam is worth 50% of the total exam mark. Well organised responses that were legible and with the facts clearly laid out scored higher. Candidates who covered topics comprehensively scored highly.

Each question has a possible score out of 5. Examiners mark the question using a rubric that has been prepared by the DHM Exam committee prior to the exam. This rubric has definitions and required content for achieving each of the marks from 0-5.

A high level of specific detail is required for this examination. It is also expected that candidates will know the pathophysiological basis for hyperbaric oxygen treatment, and outcomes of key randomised controlled trials, (positive and negative) relating to indications for HBOT. If there was limited evidence to support a medical opinion, or an issue is controversial, then it should be stated.

Candidates scored well when they provided succinct answers that covered the question asked, at the level of detail expected for consultant practice, and in accordance with the key phrase definitions. Candidates scored poorly if they did not provide responses that answered the requirements of key phases in the question. A list of definitions has been provided on the DHM website and is repeated below. Providing additional information that was not requested in the question did not result in loss of marks but would have wasted the Candidates' time. Candidates should not use abbreviations when they have not been explained previously or may not be in common use. When referring to mechanisms or pathophysiology, it is preferable that candidates describe the mechanism and don't just quote an author or paper.

It is an expectation that candidates should have sound knowledge of key literature relating to a topic, including Standards, guidelines or documents that have been produced by expert consensus or workshops. It is considered reasonable to expect candidates to be familiar with recent papers in *Diving and Hyperbaric Medicine* Journal. They should also possess sound knowledge of the pathophysiology and treatment of conditions that affect divers.

All candidates and supervisors are strongly advised to become conversant with the key phrase definitions for questions in the DHM exam. Failure to answer the question led to lower scores.

## **Key phrases in questions and their definitions:**

**COMPARE** Look for similarities and differences

**CONTRAST** Set in opposition in order to bring out differences

**DEFINE** Give the precise meaning

**DESCRIBE** Give a detailed account of

**EVALUATE** Make an appraisal of the worth of something

**EXPLAIN** Make plain, interpret, account for

**ILLUSTRATE** Make clear by concrete examples (or use a diagram to clarify)

**JUSTIFY** Show adequate grounds for decisions

**LIST** Catalogue by groups or classes with minimal explanation

**OUTLINE** Give the main features or general principles

**RELATE** Show how things are connected to each other and how they affect each other

## **ADVANCED DIPLOMA OF DIVING AND HYPERBARIC EXAMINATION REPORT FOR DHM EXAM GROUP AUGUST/SEPTEMBER 2024**

### **Question 1**

**Compare and contrast the differences in medical fitness requirements for a staff member for hyperbaric exposure in a hospital hyperbaric chamber versus occupational diving in the water.**

This question looked specifically at Commercial diving medical and Hyperbaric Facility attendant medicals. Both candidates made tables with comparisons but did not seem to understand the actual differences as both medicals are almost identical. The issues of differentiation were that the ENVIRONMENT was very different, with significantly increased workload and remoteness of help being the main differentiator. This showed limited comprehension of the contrast aspect of the question. Also, some comparator items are not actually in the medical. Overall, very poorly answered.

### **Question 2**

**A diver was recently diagnosed with immersion pulmonary oedema after an episode of dyspnoea when diving. The episode required transfer and treatment in a local emergency department. The diagnosis has been confirmed by a diving medicine specialist.**

Generally answered well with a good overview of pathophysiology. Neither candidate stated that the recurrence of IPO is up to 30% and may be fatal.

### **Question 3**

**A diver surfaces from a 20m dive feeling well. After about 20 minutes he pulls up the anchor, which involves considerable effort because it is stuck in kelp. He suddenly experiences severe vertigo and begins vomiting. He also notes that he has “fullness” in his right ear and diminished hearing.**

One candidate scored very highly but the other failed to identify inner ear barotrauma as a cause and therefore missed the point of the question. This question has been used previously so the Exam Committee didn't feel it was a wording problem. Part three of the question was very briefly covered. This may be a timing issue with the length of the question.

### **Question 4**

**A compressed air diver develops a headache shortly after diving. Discuss the potential differential diagnoses and outline your approach determining the most likely diagnosis.**

Both candidates answered this question well with comprehensive lists of differential diagnoses and their approach to diagnosis.

## Question 5

**Outline the important elements of investigating a diving death.**

This question again was well answered by both candidates with good headings covering the main elements to consider.

## Question 6

**a. List the conditions that would be regarded as contraindications for patients to be treated with Hyperbaric Oxygen Treatment (HBOT), and the reasons why each condition is contraindicated. (60%)**

**b. Discuss the merits of classifying conditions as absolute or relative contraindications to HBOT. (40%)**

One candidate did very well in this question in illustrating the 'relative' contraindications vs 'absolute' and explained that the absolute term is not true as most of these can be mitigated whereas the other candidate had a statement that you could not treat a person with an absolute contraindication without discussion of risk mitigation.

## Question 7

**Discuss the evidence available and accepted current practice for the use of hyperbaric oxygen for soft tissue radiation injury.**

Both candidates provided good answers on one of the main indications for Hyperbaric oxygen. However, both candidates were lacking in a discussion of the available evidence.

## Question 8

- 1) List the potential pathophysiological benefits of hyperbaric oxygen in idiopathic sudden sensorineural hearing loss (ISSNHL). (40%)**
- 2) You have been tasked with producing a protocol for the treatment of ISSNHL for your hospital. Outline your protocol and justify your recommendation based on the best available clinical evidence. (60%)**

Both candidates gave a thorough review of the pathophysiological benefits of hyperbaric oxygen in ISSNHL. However, like question 7, both candidates did not list the evidence to justify their protocols.

## Question 9

**A referring specialist has concerns about hyperbaric oxygen causing tumour recurrence. Outline your approach to discussing the issue with the specialist and describe the available evidence regarding hyperbaric oxygen and cancer growth.**

This is a common question in the field and an approach that invites the Specialist to the department scored highly. Unfortunately, both of these answers were brief with limited evidence. Neither referenced the Feldmeier review nor mentioned HBOT tumour sensitisation for radiotherapy.

## Question 10

- 1) Describe the effects of oxygen toxicity that may occur during hyperbaric oxygen treatment (HBOT). (40%)**
- 2) What strategies can be used to minimise or prevent oxygen toxicity (60%)**

Both candidates answered the first part well with a comprehensive description of the effects. However, the mitigation responses were poor and neither candidate mentioned staff/ patient education re warning signs and neither discussed the medications that may increase the risk.

## Written exam - Specific comments

It was generally felt the exam was fair with a good coverage of important topics at a Consultant level. The legibility was excellent from both candidates.

## Oral Exam – Specific Comments

The viva covers a broad range of topics within the curriculum, is undertaken by two examiners and runs for 30 minutes covering two diving medicine questions and two hyperbaric medicine questions. The viva exam is worth 50 marks, or 50% of the exam.

The specific oral question scenarios have not been described here, but the topics ranged from dive risk assessment and accident management, medical fitness and standards, hyperbaric facility safety, and medical patient risk/benefit assessment.

It is expected that DipAdvDHM candidates will have a detailed knowledge of diving risk assessment, how to interpret dive tables and dive accident management, a comprehensive structure for how to assess fitness to dive, thorough knowledge of hyperbaric chamber safety issues (as per AS/NZS 4774.2), and risk benefit assessment of hyperbaric medical patients.

Candidates were generally well prepared for the viva exam, and both candidates were successful.

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### 2024 DHM Exam Results

To achieve a pass the candidate must achieve a mark of at least 50 per cent (50 marks) out of the total 100 marks. The total possible mark for the examination was 100 marks, with a pass requiring 50/100.

Candidates who scored less than 25/50 for the written exam were not invited to sit the viva exam.

The results for the exam were as follows:

Candidates	Successful	% Successful
Written Exam	2	100%
Viva Exam	2	100%
2024 DHM Exam	2	100%

The two candidates passed both sections of the exam.

Successful candidates came from Western Australia and Tasmania.

### Report prepared by:

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