

# 24th ASIAN CONGRESS ON OCCUPATIONAL HEALTH 2026 (ACOH 2026)

## PRE-CONGRESS WORKSHOP

### WHAT OCCUPATIONAL HEALTH PROFESSIONALS NEED TO KNOW ABOUT DIVING MEDICINE ?

Date: 5 August 2026

Time: 2:00 PM – 6:30 PM

Speaker: DR HANIZAH MOHD YUSOFF

#### 1. Introduction

Diving medicine is a specialised field that addresses the physiological and medical challenges associated with underwater environments. Occupational health professionals involved in industries such as offshore oil and gas, marine construction, underwater inspection, and commercial diving must understand the health risks, fitness requirements, and emergency management associated with diving activities.

This workshop provides an overview of diving physiology, occupational risks, medical assessment of divers, and management of diving-related illnesses to enable occupational health practitioners to support safe diving operations and protect the health of divers working in high-risk environments.

#### 2. Course Objectives

1. Explain the basic physiology of diving and pressure-related changes in the human body.
2. Identify common occupational hazards associated with diving activities.
3. Recognise symptoms and mechanisms of major diving-related illnesses.
4. Understand medical fitness requirements and screening for occupational divers.
5. Discuss preventive measures and emergency management related to diving incidents.

#### 3. Course Content Outline

##### Module 1: Fundamentals of Diving Physiology

- Pressure and gas laws relevant to diving (Boyle's Law, Dalton's Law, Henry's Law)
- Physiological changes during descent and ascent
- Respiratory responses to increased ambient pressure
- Cardiovascular responses in hyperbaric environments
- Effects of pressure on body cavities and tissues
- Overview of hyperbaric and underwater environments

## **Module 2: Occupational Diving Hazards**

- Environmental hazards in underwater workplaces
- Barotrauma and pressure-related injuries
- Gas toxicity (oxygen toxicity and nitrogen narcosis)
- Thermal stress and fatigue during diving operations
- Decompression stress and occupational exposure risks
- Module 3: Practical Demonstration & Case Application
- Demonstration of AI-based analytical tools
- Interpreting AI-generated outputs
- Case-based scenario analysis
- Risk analysis using AI insights

## **Module 3: Diving-Related Illnesses**

- Decompression sickness (DCS): mechanisms and clinical manifestations
- Arterial gas embolism
- Barotrauma of the ear, sinus, lung, and teeth
- Nitrogen narcosis and oxygen toxicity
- Immersion pulmonary oedema
- Recognition of early warning signs and field management

## **Module 4: Fitness-to-Dive Assessment**

- Medical standards for occupational divers
- Pre-employment and periodic medical examinations
- Contraindications to diving
- Risk assessment for workers with chronic medical conditions
- Fitness-for-work decision making in diving operations
- Role of occupational health professionals in diver monitoring and clearance

## **Module 5: Emergency Response and Preventive Strategies**

- Emergency management of diving incidents
- Role of recompression therapy and hyperbaric chambers
- Immediate response to decompression illness
- Incident reporting and occupational investigation
- Preventive strategies in diving operations
- Occupational health professional's role in diving safety programmes