

## UMG 100-01 Diver Periodic Health Assessments

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### References:

- A. CF H Svcs Gp Instruction 4000-04 Diver Periodic Health Assessment and Medical Administration ([link](#))
- B. DND 4949 - Visual Examination "Divers" ([link](#))
- C. UMG 200-03 Diver Cardiovascular Risk Screening and Primary Prevention ([link](#))
- D. FSG 600-01 Aircrew Cardiovascular Risk Screening ([link](#))
- E. Canadian Armed Forces Medical Standards (CFP 154) ([link](#))
- F. DND 2776 - Visual Acuity "Aircrew" ([link](#))

### Record of Amendments

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## BACKGROUND

1. The purpose of this UMG is to provide direction to all Canadian Forces Health Services Group (CF H Svcs Gp) personnel regarding the requirements and procedures for conducting Diver Periodic Health Assessments (PHAs).
2. This UMG applies to all CAF personnel, Department of National Defence (DND) Public Servants, contractors and sub-contractors who provide health services to CF members.

## GENERAL DIRECTION

3. This Instruction is to be read in conjunction with reference A.
4. The initial medical selection for divers and diving support trades, as well as routine PHA assessment thereafter are multi-step processes that include medical examination, medical testing, and second level review. For some dive trades, further CFEME assessment and approval is required (CD, SAR) prior to initial fitness to dive determination.
5. This UMG describes the initial selection process as well as routine PHA assessments, required testing, and trade-specific medical processing requirements. This UMG also applies when Divers are assessed for any other medical reason outside the normal PHA schedule.
6. The main purposes of diver medical assessments are therefore to:
  - a. Provide an opportunity for a diver or dive candidate to bring health concerns to the attention of an undersea medicine clinician;
  - b. Identify diseases and conditions that are affecting or have the potential to affect the health of a diver;
  - c. Provide screening for medical conditions known to be associated with occupational exposure in the CF environment;
  - d. Assess lifestyle habits and provide positive health promotion recommendations (e.g. regarding diet, physical activity, substance use);
  - e. Institute appropriate counseling, therapy, and follow-up to address identified or potential health concerns;
  - f. Determine whether a member is initially medically fit to enter a dive-related trade; and
  - g. Reaffirm ongoing fitness to dive or amend the medical category as required.

## CLASSIFICATION OF DIVE TRADES: GROUP A DIVERS AND GROUP B DIVING SUPPORT TRADES

7. As per the CF H Svcs Group Instruction 4000-04, for the purpose of this UMG the dive occupations will be divided into Group A and B, on the basis of different exposures and safety implications of the various occupations.
  - a. **Group A Divers – Deep Water Divers**
    - i. Clearance Divers (CD)
    - ii. Port Inspection Divers (PID)
  - b. **Group A Divers -Shallow Water Divers**
    - i. Ship Divers (SD)
    - ii. Combat Divers
    - iii. Search and Rescue Divers (SAR)
    - iv. Special Operation Forces Divers (SOF)
  - c. **Group B Diving Support Trade**
    - i. Diving Medical Officers (DMOs)
    - ii. Diving Physician Assistants (DPAs)
    - iii. Diving Nurse Practitioners (DNPs)
    - iv. Diving Medical Technicians (DMTs)
    - v. Aviation Physiology Technicians (Av Phys Techs)
    - vi. BioScience Officers (BIO)
    - vii. Other MOSIDS who may require qualification as Inside Attendant

**Table 1 Minimum Medical Standards for Selection and Duty<sup>Δ</sup>**

Diver Group	V	CV	H	G	O	A
<b>Group A DWD CDs</b>	3*	1	2	2 <sup>#</sup>	2 <sup>#</sup>	5
<b>Group A DWD PID</b>	3*	2	2	2 <sup>#</sup>	2 <sup>#</sup>	5
<b>Group A SWDs</b>	3*	2	2	2 <sup>#</sup>	2 <sup>#</sup>	5
<b>Group B Support</b>	As per trade requirement					

\* See “Diver Ocular Assessments” below. All initial candidates must be examined by an Optometrist/Ophthalmologist within 12 months of the Part 2 of the PHA. Not all V3 initial applicants will meet the visual requirements for CAF diving. Only those divers who see 6/30 or better binocularly (using both eyes), are correctible to V1, have no disqualifying underlying eye disease and N8 or better (in best eye) on near vision testing meet trade standards.

# An initial diver who falls below the G or O trade standards may be considered on a case-by-case basis if the assigned MELs are not contrary to CAF diving. Final determination will be made by a CDSM.

Δ A trained diver who falls below the minimum medical standard for their trade may be considered for ongoing retention in the trade on a case-by-case basis if the assigned MELs are not contrary to CAF diving. The case shall be reviewed by a CDSM as well as DMedPol.

## PHA REQUIREMENTS

8. Table 2 provides a complete list of required documentation and investigations. Laboratory investigations and testing must have been completed within 12 months preceding an initial dive examination or as per the validity states (e.g., every 4 years to 40 then every 2 years).

**Table 2 Documentation and Investigation Requirements**

	Item	Initial	Type I (long)	Type II (short)	Details
Documentation	DND 2939	+/-			Group A Divers Only. Diver/unit responsibility to initiate. Scan into CFHIS under PHA
	DND 2452	X	X	X	
	DND 2552	X	X	X	
	4000-24 Annex A DON Screen	X	X	X	LBS is required in 2 situations: 1) positive response on DON screen 2) initial baseline for PID and CDs
	CF 2033	X	X	X	Clinician to indicate due date of next PHA
	CF 2088	X	+/-	+/-	If MELs/change in category or new trade approval/transition
Part 1	Height, weight, blood pressure	X	X	+/-	Every 2 years until 40 years old, then annually
	Vision Assess		+/-	+/-	As per "Diver Ocular Assessments"
	Colour Vision	X			If not completed on enrolment PHA and at time of CD supplemental medical assessment at CFEME
	Audiogram	X	X	X	Annual
Investigations	Formal Visual Examination	X	+/-	+/-	As per "Diver Ocular Assessments"
	Fasting blood glucose	X			
	HbA1c	X	+/-	+/-	Every 4 years until 40 years old, then every 2 years
	Lipids	X Fasting	+/-	+/-	Every 4 years until 40 years old, then every 2 years. <i>Fasting lipids are required on initial</i>
	ApoB	X	+/-	+/-	At initial, then subsequent PHA if triglycerides >1.5mmol/L
	Lp(a)	X	+/-	+/-	Once at initial (or subsequent PHA if not on file)
	hsCRP	X	X	+/-	Every 4 years until 40 years old, then every 2 years
	Creatinine	X			
	Sickle Cell Screen	+/-			If at risk population and not previously screened, consider testing as per local availability/SOP.
	Liver enzymes (GGT, AST, ALT, ALP)	X			AST is no longer being covered by all provinces. In this situation, if no clinical indication, AST may be omitted
	CBC	X	X		
	Urine dipstick	X	X		Add Microscopic examination if clinically indicated
	ECG	X	+/-	+/-	Every 4 years until 40 years old, then every 2 years
	Chest X-ray (3V: ins/exp and lat)	X			
	Long Bone Survey	+/-	+/-	+/-	LBS is required in 2 situations: 1) positive response on DON screen

					2) initial baseline for PID and CDs
	Spirometry	X			<p>Correct patient demographics (age, height, ethnicity, etc.) must be inputted for screening spirometry as these affect the normative values. Once confirmed input data is correct and technique acceptable, criteria for additional testing and CDSM review:</p> <p><b>When Z-score (SD) available (preferred)</b></p> <ul style="list-style-type: none"> <li>- FVC, FEV<sub>1</sub> or FEV<sub>1</sub>/FVC &lt; -1.64 (%5) <ul style="list-style-type: none"> <li>• Order pre/post BD, full PFT</li> <li>• +/- provocative test if hx of asthma or hyperreactivity</li> </ul> </li> <li>- Any score &lt; -1.96 (2.5%) – as above plus referral to respirology</li> </ul> <p><b>When Z-Score (SD) not available:</b></p> <ul style="list-style-type: none"> <li>- FVC &lt; 80%, FEV<sub>1</sub> &lt; 80%, or FEV<sub>1</sub>/FVC &lt; 0.7 <ul style="list-style-type: none"> <li>• Order pre/post BD, full PFT</li> <li>• +/- provocative test if hx of asthma or hyperreactivity</li> </ul> </li> </ul>
	CT Coronary Artery Calcium Scoring (CT CACS)	+/-	+/-	+/-	CAC screen in CD and PID if at intermediate or high risk: See CV screening below*
Other					
	Dental Examination	X	X	X	

### Diver Ocular Assessments

9. Formal diver eye examinations may be done by an ophthalmologist or an optometrist.
  - a. A periodic eye examination will be completed at initial and then every 4 years once the diver has reached the age of 30 years old.
  - b. Additional eye examinations can be completed as clinically indicated.
10. Formal diver eye examinations should include a thorough clinical ophthalmological assessment and must include the following elements, with the results of each clearly documented on a DND 4949 – Visual Examination – “Divers” Form.
  - a. Near vision at 30-50cm and distant visual acuity, corrected and uncorrected including each eye separately as well as binocular vision:
    - i. Near vision at 30-50 cm must meet minimum requirement of N8. If diver is over 40 years old, to be tested with any correction that they would be using while diving.
    - ii. Distance vision must meet *6/30 or better binocularly (using both eyes), and correctable to V1.*
  - b. Refraction:
    - i. A cycloplegic refraction is required on initial medical selection

- ii. For subsequent examinations after selection, a manifest refraction may be done in lieu of cycloplegic refraction.
  - c. Dilated fundoscopy is required for initial medical selection of divers and then only as clinically indicated.
  - d. Ocular muscle balance assessment for any horizontal and vertical heterophoria is required as follows: ocular muscle balance measured in prism diopters using the alternate cover test or Maddox rod at 6m and at 30-50cm with the individual wearing the correction required for these distances.
  - e. Intraocular pressures with referral to an ophthalmologist for full glaucoma assessment if identified as a glaucoma suspect (see AMA 100-01 for diagnostic criteria).
11. IOT reduce duplicate efforts, the DND 2776 Visual Acuity "Aircrew" will be accepted in lieu of the DND 4949 for any divers who are also active aircrew, as long as an uncorrected distance binocular (using both eyes) visual acuity is assessed and included on the DND 2776 (i.e., hand-annotated in the uncorrected vision or comments section).
12. In interim years, visual acuity will be assessed during the Part 1 as per CFP 154.

### **Diver Cardiovascular (CV) Screening and Primary Prevention**

13. Group A diver CV screening will be completed every 4 years until the age of 40, and then every 2 years thereafter. Group B diver CV screening will be completed at their Type 1 dive PHA.
14. Primary screening risk factor data includes:
- a. Risk factors on history:
    - i. Traditional CV risk factors such as smoking history, family history of premature CAD in a first-degree male relative under 55 or female relative under 65
    - ii. Other associated atherosclerotic risk factors including peripheral vascular disease, cerebrovascular disease, erectile dysfunction, gestational hypertension/diabetes etc.
  - b. Risk factors on Part 1 and investigations:
    - i. Height, weight, and waist circumference
    - ii. Blood pressure
    - iii. Resting ECG
    - iv. Lipid profile
    - v. Fasting for initial dive PHA, non-fasting thereafter
    - vi. Total cholesterol, HDL cholesterol, LDL cholesterol, Triglycerides, Non-HDL cholesterol
    - vii. A1C
    - viii. High sensitivity CRP
    - ix. Fasting glucose – at initial dive PHA
    - x. Lp(a) – one-time only (at initial dive PHA or subsequent PHA if not on file. Result can be referred to in future re-evaluation without repeating each time)
    - xi. ApoB – at initial dive PHA, then subsequent PHA if triglycerides >1.5mmol/L
15. Risk calculation shall be completed using the Framingham Cardiovascular Disease Risk Calculator/FHP, Epidemiology Branch (FHP/CDRC) ([Link](#)).

**Table 3 Classification of Cardiovascular Risk Levels**

	<b>Any of the following:</b>
<b>High Risk</b>	<ul style="list-style-type: none"> <li>• FHP/CDRC risk <math>\geq 20\%/10</math> years</li> <li>• Established diagnosis of atherosclerotic disease (including peripheral vascular disease)</li> <li>• Diabetes</li> <li>• Chronic renal disease</li> <li>• Individuals with intermediate CDRC risk 10-19%/10 years and any one of the following: <ul style="list-style-type: none"> <li>– Metabolic syndrome</li> <li>– Family history of CAD in a first degree relative (male &lt; 55 or female &lt; 65 years old)</li> </ul> </li> </ul>
<b>Intermediate Risk</b>	<ul style="list-style-type: none"> <li>• FHP/CDRC risk 10-19%/10 years</li> <li>• Individuals with low CDRC risk &lt;10%/10 years and any one of the following: <ul style="list-style-type: none"> <li>– Metabolic syndrome</li> <li>– Family history of CAD in a first degree relative (male &lt; 55 or female &lt; 65 years old)</li> <li>– Persistently elevated hs-CRP &gt;3mmol/L in the absence of other known inflammatory processes</li> <li>– Elevated Lp(a) and over 40 years old</li> </ul> </li> </ul>
<b>Low Risk</b>	<ul style="list-style-type: none"> <li>• FHP/CDRC risk &lt;10%/10 years</li> </ul>

16. **CDs and PIDs** will require CT coronary artery calcium scoring (CT CACs) if classified as intermediate or high risk as defined at Table 3. Gated is preferred, however non-gated is acceptable based on availability. Generally, CT CACs will only be ordered once or at most once every 5 years if determined to be clinically required by a CDSM.

- CT CACs will then be used to calculate an Astro-CHARM risk.
- Management will be as per UMG 200-03.

17. The following patient files should be reviewed by a CDSM to determine if MELs are required (divers remain fit diving while undergoing review by CDSM):

- Any diver at high risk based as defined at Table 3
- Any diver with an Astro-CHARM risk  $\geq 10\%/10$  year
- Any diver found to have CAC  $\geq 100$
- Any diver if high suspicion or concern for CAD (e.g., angina or related symptoms)

18. Further details on diver cardiovascular risk screening and primary prevention are outlined in UMG 200-03 (Ref C).

### **Immunizations**

19. Initial Dive candidates are advised to complete all North American Standard Immunizations as per Directorate of Force Health Protection (DFHP) Advisory 6643-11 and 6643-12. The below guidance is informed by CSA standard Z275.2:20 – Occupational Safety Code for Diving Operations.

- a. CAF divers may be required to dive in contaminated waters and undertake activities that increases risk of infection secondary to fecal-oral transmission routes as well as contact with contaminated soil. Initial diver training entails close quarters for prolonged period. Diving in remote areas of the world with limited medical care will likely expose divers to pathogens uncommon to North America. Additional consideration for vaccine prophylaxis is therefore required.
- b. Routine immunizations:
  - i. For Hepatitis A and B, divers may be loaded on training only if the series has commenced and must be completed by next scheduled PHA otherwise the diver will be made unfit diving until series is completed.
  - ii. Members without Valid Td and Poliomyelitis immunizations will be deemed unfit CAF Diving.
  - iii. Members with other deficiencies in NA standard vaccination are encouraged to rectify these prior to dive training. There may be limitations imposed on locations / operations / exercises based on these deficiencies.
- c. Operational immunizations:
  - i. CAF Health Protection Recommendations (including vaccination) by location can be found here within the CF H SVC Instruction 6643 series.
  - ii. Dukoral may be required or recommended for fresh water diving in certain international areas.
  - iii. In rare circumstances, Polio booster may be recommended for diving in certain heavily contaminated fresh water areas internationally.
  - iv. In consultation with CDSM or DFHP, consider use of doxycycline as a prophylaxis for prevention of leptospirosis in individuals who will dive in certain international fresh water areas.
  - v. Other operational immunization advice can be sought through the CDSM or through DFHP.

## **MEDICAL SELECTION PROCESS**

### **Group A Shallow Water Divers**

20. Diver selection begins with a member's chain of command supporting nomination for a dive course. The Diver candidate/Unit will initiate the 2939 process.
  - a. All blocks of 2939 up to and including last item of Pre-Screening must be completed before an initial dive PHA will be scheduled.
  - b. An initial dive PHA will be completed by a qualified undersea medicine clinician. Clinician to ensure all documentation and investigations are scanned into CFHIS.
  - c. The file is forwarded virtually through CFHIS to the appropriate review and approval authority as per tables 4 and 5 using the generic CFHIS CDSM inboxes.

### **Group B Diving Support Trades**

21. Group B Diving Support Trades includes a variety of MOSIDs that provide support to Group A divers. While there may be opportunities for familiarization diving, these trades do not routinely complete diving activities and only do so under the supervision of Dive Trades.
22. Fitness to dive consideration for Group B Diving Support Trades needs to consider fitness for a recompression chamber (Fit RCC) and fitness for diving training. While fitness for diving training is not mandatory, all Group B Diving Support Trades must be fit for Recompression Chamber.



23. A DND 2939 is not required for Group B Diving Support Trades, however the examining clinician should still confirm that the Immunizations, Dental examination, and CF physical fitness (FORCE test) are up to date.
24. An initial dive PHA will be completed by a qualified undersea medicine clinician. Clinician is to ensure all documentation and investigations are scanned into CFHIS.
25. The file is then forwarded virtually through CFHIS to the appropriate review and approval authority as per tables 4 and 5 using the generic CFHIS CDSM inboxes.
  - a. Fit ADPA/ADNP/ADMO indicates that the mbr is fit for Recompression Chamber and diving training.
  - b. Fit ADPA/ADNP/ADMO for RCC only indicates that the mbr is fit only for hyperbaric exposure in a recompression chamber. Familiarization diving on the Dive Medicine Advanced Course may be considered on a case-by-case basis by the regional CDSM.

### **Clearance Diver Selection**

26. NCM Clearance Diver selection begins with a member formally applying for a Voluntary Occupation Transfer (VOT) through a Personnel Selection Officer (PSO) whereas Clearance Diving Officer (CLDO) candidates do not require a VOT and initiate their requests through CoC.
27. Eligible candidates, aptitude is assessed at a Clearance Diver Assessment Centre (CDAC) serial, which requires fitness for SWD prior to commencing.
28. Prior to attending CDAC
  - a. Diver candidate will initiate the 2939 process
    - i. All blocks up to and including and including last item of Pre-Screening must be completed before an initial dive PHA will be scheduled.
  - b. A current/valid Diver PHA is required:
    - i. For candidates without previous CAF diving experience, this shall consist of a complete Initial SWD PHA.
    - ii. For candidates with previous diving experience, this shall consist of a meeting with a DMO/DPA/DNP to review their most recent Diver PHA, ensure it is current, and confirm no interim health issues of concern.
  - c. For NCM candidates, a DND 4995 Application for In-Service Selection Program is also required:
    - i. If recommending fit diver training, examining DMO/DMT/DPA may sign DND 4995 part 2 with comment "Recommended fit diver training, pending review by Approval Authority" and ensure that "yes" is checked for initially fit diver block.
    - ii. If there are concerns that candidate may be unfit diving, signing of DND 4495 shall be deferred to the approval authority.
  - d. The file is forwarded virtually through CFHIS to the appropriate review and approval authority as per tables 4 and 5.
29. Divers selected to continue processing after completion of CDAC, undergo a supplemental medical assessment at CFEME Toronto.
  - a. Prior to arrival at CFEME Toronto, an appointment with a local undersea medicine clinician shall be made to ensure:

- i. PHA is up to date and no interim changes
  - ii. All required laboratory investigations for an initial dive PHA have completed within 1 year of assessment
  - iii. ECG, CXray are up to date
  - iv. A Long bone survey is completed
- b. The supplemental assessment at CFEME Toronto is conducted by a CDSM or ADMO designate, and includes
  - i. Echocardiogram and bubble contrast Transthoracic Echocardiogram (bc-TTE)
  - ii. Full Pulmonary Function Testing
  - iii. Repeat Colour Vision examination
  - iv. Clinical assessment
  - v. Any additional investigations as deemed necessary by the examining clinician or CDSM
- c. As this is a supplemental assessment, this does not reset the validity or timing of the PHA cycle. In addition, no log book signature is required.

### **Port Inspection Diver Selection**

- 30. While PID Level 1 are classified as Shallow Water Divers, PIDs may progress to Level 2-4 without further medical review beyond the routine PHA cycle. Fitness to dive for PID candidates must take this progression into account.
- 31. PID candidates are enrolled in two fashions: civilian PID candidates are enrolled after confirmation that they meet the CAF common Enrolment Medical Standard whereas current RegF CAF members may also transfer to the ResF.
  - a. If enrolled as PIDS, they are not considered fit to dive as a PID until a PID PHA is completed and approved by a CDSM.
- 32. All PID candidates must complete a DND 2939 with a valid Diver PHA prior to loading on their first PID dive course or completing any PID dive training.
  - a. For current CAF divers, this requires an up to date and valid Diver PHA, with confirmation no interim health concerns that affect fitness to dive
  - b. For new CAF divers, this requires Initial Diver PHA
- 33. After examining clinician assessment, the file is sent to the Approval Authority (CDSM) for review and decision. **Only a CDSM** may determine fitness to dive for a PID candidate.

### **Search and Rescue Selection**

- 34. Search and Rescue (SAR) technicians are both aircrew and divers. As such, the overall SAR medical fitness approval requires dual sign-off by a CDSM or designated ADMO and a designated Aerospace Medicine Consultant.
- 35. The medical screening process for SAR techs is detailed in Flight Surgeon Guideline 100-01 which is the primary reference for the SAR Tech medical selection process.
- 36. If selected after Jarvis Lake (SAR Tech Selection Course) SAR candidates will complete an initial SAR-Tech medical examination in-person at CFEME.
  - a. If the candidate is already a CAF diver, validity requirements for investigations will be as per the routine cycle outlined above.

- b. If the candidate is not currently a CAF diver, all initial PHA investigations will be required.

## DIVER PHA PERIODS OF VALIDITY

### Group A Divers

- 37. All Diver Type I PHAs are valid for 2 years from the end of the month on which the PHA was conducted (not necessarily 2<sup>nd</sup> signed) with a Type 2 PHA required in the interval year.
  - a. Please note that the type 2 PHA is valid for **up to 1 year** (e.g. if a type 2 PHA is delayed and completed 14 months after a Type 1 PHA, the next Type 1 PHA is due at 24 months from the last Type 1 PHA, in this case 10 months after the Type 2 PHA).
- 38. The period of validity may be extended by 60 days for operational reasons at the discretion of the applicable Approval Authority. After this period, the diver is declared “unfit to dive” until the Diver PHA is completed.
  - a. A diver Type II PHA may be used to extend or reinstate diving medical fitness for a period of up to one year, until such time as a Diver Type I PHA examination would have been due.
  - b. In the event that both Type I and Type II PHAs expired, medical fitness to dive may be reinstated only with a new Diver Type I PHA (long). Based on the clinical context and time lapses, the examining and reviewing clinicians have the discretion to require additional testing and review consistent with an Initial Diver PHA.

### Group B Divers

- 39. All group B Divers will complete a Type I PHA (long) on the same time interval as per CF H Svcs Gp PD 4000-01 Periodic Health Assessment (every 5 years up to 40 years old, then every 2 years thereafter). Group B Divers will complete a Type II PHA (short) in every interim year.

### Delay in training

- 40. There are instances in which a diver candidate is deemed fit by the appropriate approval authority after an initial diver PHA, however their training is delayed.
- 41. If a diver candidate does not start dive training within 12 months of an initial diver PHA, they may extend validity by following the PHA Type II/Type I cycle like a qualified diver.
- 42. 2939 requirements:
  - a. If the 2939 is being completed for the **first time** for an **initial** shallow water diver or PID PHA, box 8D will need to be signed by the appropriate signing authority.
  - b. If a diver has been previous deemed fit Group A diver by the appropriate signing authority with the signed 2939 in CFHIS, a second 2939 is still required prior to course nomination. In this event, the local Undersea Medicine clinician will ensure that the PHA is up to date and no changes that impact fitness for diving have occurred. They may then complete the 2939 with the addition of the following statement “Fit initial [diver trade] as per [signing authority rank, name, role] review dated [yy/mm/dd].”

## **MEDICAL EMPLOYMENT LIMITATIONS (MELS)**

43. All MELS restricting diving status must be communicated expeditiously to the CAF member's Chain of Command. This is achieved through Medical Disposition Notes (MDN) or a 2088.

### **Temporary MELS and Temporary Categories (TCATs) less than 12 months**

44. Short term MELS and TCATs restricting diving status may be initiated by any clinician in the context of a concern about fitness to dive.
- a. Short term MELS are generally less than 30 days and are documented with a CFHIS Medical Disposition Note.
  - b. TCATs require a 2033 and 2088.
45. Removal of MELS or TCATs less than 12 months related to diving must be done by a qualified undersea medicine clinician.
- a. In order for a DPA or DNP to remove a diving related MEL, the underlying medical condition must fall within their scope of practice.

### **Temporary Medical Categories (TCAT) more than 12 months and Permanent Medical Categories (PCATs)**

46. If diving restrictions total more than 12 consecutive months or a PCAT is recommended, CDSM review is required. The CDSM may seek further consultation from US-AUMB at their discretion.
47. Once reviewed by a qualified undersea medicine clinician and any diving related MELS applied, the file will be forwarded to the Base Surgeon for final review/approval of the overall TCAT extension or PCAT recommendation.
48. Once the file is complete and scanned into CFHIS, the file is then forwarded to the regional CDSM using the generic CDSM CFHIS inboxes.
- a. Identifiers for CDSM (Atlantic), CDSM (Central) and CDSM (Pacific) are CDMA, CDMC, and CDMP respectively.
49. A CDSM may approve a PCAT without DMedPol Review only if:
- a. Vision, Colour Vision, and Hearing falls within MOSID standard;
  - b. No geographic or occupational category change; and
  - c. Diving is not a primary duty.
50. The file shall be forwarded by the CDSM to D Med Pol for further review if restrictions total more than 12 months or if any of the following apply:
- a. Vision, Colour Vision, or Hearing falls below MOSID standard;
  - b. Any Geographic or Occupational category change (with exception of shaving MEL); or
  - c. Primary diving MOSID (e.g. PID or Clearance Diver).

**Table 4 Minimum Examining, Reviewing, and Approval Authorities**

Diver Exam Type	Examining Clinician	Reviewing Clinician	Approval Authority
<b>Initial Group A SWD</b> (Ship, Combat, SOF)	DPA/DNP/DMO <sup>1</sup>	ADMO <sup>2</sup>	CDSM or delegated ADMO (e.g. Fleet Surgeon)
<b>Initial Group B</b>	DPA/DNP/DMO <sup>1</sup>	ADMO <sup>2</sup>	CDSM or delegated ADMO (e.g. Fleet Surgeon)
<b>Initial Group A DWD</b> (PID)	DPA/DNP/DMO <sup>1</sup>	ADMO <sup>2</sup>	CDSM
<b>Initial Group A DWD</b> (CD)	DPA/DNP/DMO <sup>1</sup>	ADMO <sup>2</sup>	CDSM or delegated CFEME ADMO
<b>Initial Group A</b> (SAR)	DPA/DNP/DMO <sup>1</sup>	ADMO <sup>2</sup>	CDSM or delegated CFEME ADMO
<b>Type I PHA</b>	DPA/DNP/DMO <sup>1</sup>	N/A	ADMO
<b>Type II PHA</b>	DPA/DNP/DMO <sup>1</sup>	Not required <sup>1</sup>	Examining Clinician
<b>TCAT applied &lt;12 months</b>	Any CAF clinician (if not dive trained – shall seek guidance)	N/A	ADMO
<b>TCAT removal &lt;12 months</b>	DPA/DNP/ DMO <sup>3</sup>	N/A	ADMO
<b>TCAT applied &gt; 12 months or any files going to DMedPol</b>	DPA/DNP/DMO <sup>1</sup>	CDSM	D Med Pol

**Note 1:** BAvMed / Flt surgeon can be examining clinician for Type I or Type II Diver PHAs in exceptional circumstances and only if approved by CDSM. Diver Type I and II PHAs conducted by a BAvMed/FSurg must be reviewed by a DMO. Completion of an Initial Diver PHA by a BAvMed/FSurg may only be considered in truly extenuating circumstances and only with approval by a CDSM.

**Note 2:** Can go directly to CDSM based on regional direction.

**Note 3:** A DPA / DNP may be the examining clinician for removal of temporary diving restrictions less than 12 months if the medical condition and management is within their scope of practice.

**Table 5 Geographical Location of Approval Authorities for Initial Dive PHAs**

	West of Ontario	Ontario	East of Ontario
<b>Group A SWD and Initial Group B</b> (Ship, Combat, SOF)	Formation ADMO Pacific (FSMO as delegated by regional CDSM)	CDSM(C)	Formation ADMO Atlantic (FSMO as delegated by regional CDSM)
<b>Group A DWD</b> (PID Candidates)	CDSM(P)	CDSM(C)	CDSM(A)
<b>Group A DWD</b> (CD/CLDO selectees)	CDSM or delegated CFEME ADMO		
<b>Group A SWD</b> (SAR selectees)	CDSM or delegated CFEME ADMO		

**CAF Dive Log Book (CF849)**

51. All CAF Divers require an up to date Dive Log Book.
52. For all routine PHAs, as well as any temporary or permanent medical employment limitations including TCATs/PCATs, a Medical Disposition Note (MDN) will be printed by the local H Svcs Unit once the appropriate approvals are complete.
53. Diver to place the MDN in the Dive Log Book within an adhesive clear envelope.

## Annex A Absolute and Relative Contra-Indications to CAF Diving

In considering fitness to dive wrt an underlying medical condition, one must consider the risk of subtle and/or sudden incapacitation, the risk of Decompression Illness or barotrauma, as well as the risk of disease exacerbation/conditions that are impacted by the hyperbaric environment.

This is NOT an exhaustive list; it provides examples of commonly encountered medical conditions that may post an increased risk in the hyperbaric environment.

Please note that CAF medical selection standards may differ from those issued by other certification authorities (e.g., civilian diving). Further, selection standards may differ from those applied to trained CAF divers, in which the US-AUMB may employ a medical risk assessment.

Absolute Contra-Indications to Diving	
Respiratory	<ul style="list-style-type: none"><li>• Reactive Airway disease after age 12</li><li>• Chronic bronchitis or emphysema</li><li>• Congenital pulmonary blebs or bullae</li><li>• Scarring that may change airflow patterns</li><li>• History of spontaneous pneumothorax</li></ul>
Cardiovascular	<ul style="list-style-type: none"><li>• Coronary artery disease</li><li>• Angina</li><li>• History of myocardial infarction</li><li>• Cardiomyopathy</li><li>• Valvular heart disease</li><li>• Uncontrolled hypertension</li><li>• Abnormal conduction or rhythm disturbance, particularly if associated with decreased exercise tolerance, dizziness, or decreased level of consciousness</li></ul>
HEENT	<ul style="list-style-type: none"><li>• Inner ear pathology</li><li>• Chronic otitis media, otitis externa, sinusitis</li><li>• Unhealed perforated tympanic membrane</li><li>• Obstruction of Eustachian tubes that inhibits ability to equalize</li><li>• Any condition that results in recurrent dizziness/vertigo (e.g. Meniere's disease)</li><li>• Active ophthalmologic conditions impacting vision or globe integrity</li></ul>
Neurologic	<ul style="list-style-type: none"><li>• Seizures (excluding uncomplicated febrile seizure)</li><li>• Unexplained loss of consciousness</li><li>• Significant head injury with complications</li><li>• Aneurysms</li><li>• Any neurologic condition that increases the risk of seizure or has resulted in significant neurologic deficits</li></ul>
Gastrointestinal	<ul style="list-style-type: none"><li>• Active peptic ulcer disease</li><li>• Active esophagitis</li></ul>
Endocrine	<ul style="list-style-type: none"><li>• Diabetes requiring insulin</li><li>• Diabetes insipidus</li><li>• Active and uncontrolled endocrinopathy</li></ul>
Hematology	<ul style="list-style-type: none"><li>• Significant anemia</li><li>• Sick cell disease</li></ul>

	<ul style="list-style-type: none"> <li>• Recurrent DVT/PE</li> </ul>
Psychiatric	<ul style="list-style-type: none"> <li>• Active alcohol or drug addiction</li> <li>• Neurosis, psychosis, or any psychiatric condition which affects judgment</li> <li>• Significant mood alteration including suicidal attempts</li> <li>• Past history or new onset of claustrophobia or fear of water</li> <li>• Panic disorder or history of recurrent panic attacks</li> </ul>
Infectious	<ul style="list-style-type: none"> <li>• Any acute or chronic infectious disease until appropriately treated</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Pregnancy</li> <li>• Use of drugs incompatible with diving</li> <li>• Active chemotherapy</li> <li>• Lesions of dysbaric osteonecrosis or acute/chronic sequelae of decompression illness</li> </ul>

Relative Contra-Indications to Diving To be considered on a case-by-case basis	
Cardiovascular	<ul style="list-style-type: none"> <li>• History of heart surgery</li> </ul>
HEENT	<ul style="list-style-type: none"> <li>• Chronic pathology to tympanic membrane that increases risk of perforation</li> <li>• Significant hay fever/allergic rhinitis</li> <li>• Reactive airway disease prior to age 12</li> </ul>
Neurologic	<ul style="list-style-type: none"> <li>• Minor neurologic deficits that do not impair function (e.g. local paresthesia)</li> </ul>
Gastrointestinal	<ul style="list-style-type: none"> <li>• Inflammatory or irritative conditions (e.g. Crohn's, ulcerative colitis, IBS)</li> <li>• Symptomatic hernia</li> <li>• Quiescent or remote peptic ulcer disease</li> </ul>
Endocrine	<ul style="list-style-type: none"> <li>• Diabetes controlled by oral hypoglycemic/diet</li> </ul>
Hematologic	<ul style="list-style-type: none"> <li>• Sickle cell trait</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Poor aerobic capacity</li> <li>• Characterological persistent immaturity, instability, impulsiveness, lack of judgment, or an impaired capacity to adapt to stressful situations</li> </ul>