

DIVERS ALERT NETWORK BREATH-HOLD INCIDENT DATABASE REVIEW: 2006-2011

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INTRODUCTION

- Breath-hold diving has grown in popularity
 - numerous sub-disciplines for pleasure and competition
- While generally safe, the aquatic realm is unforgiving
- Learning from incidents is important to increase diver awareness and promote safety

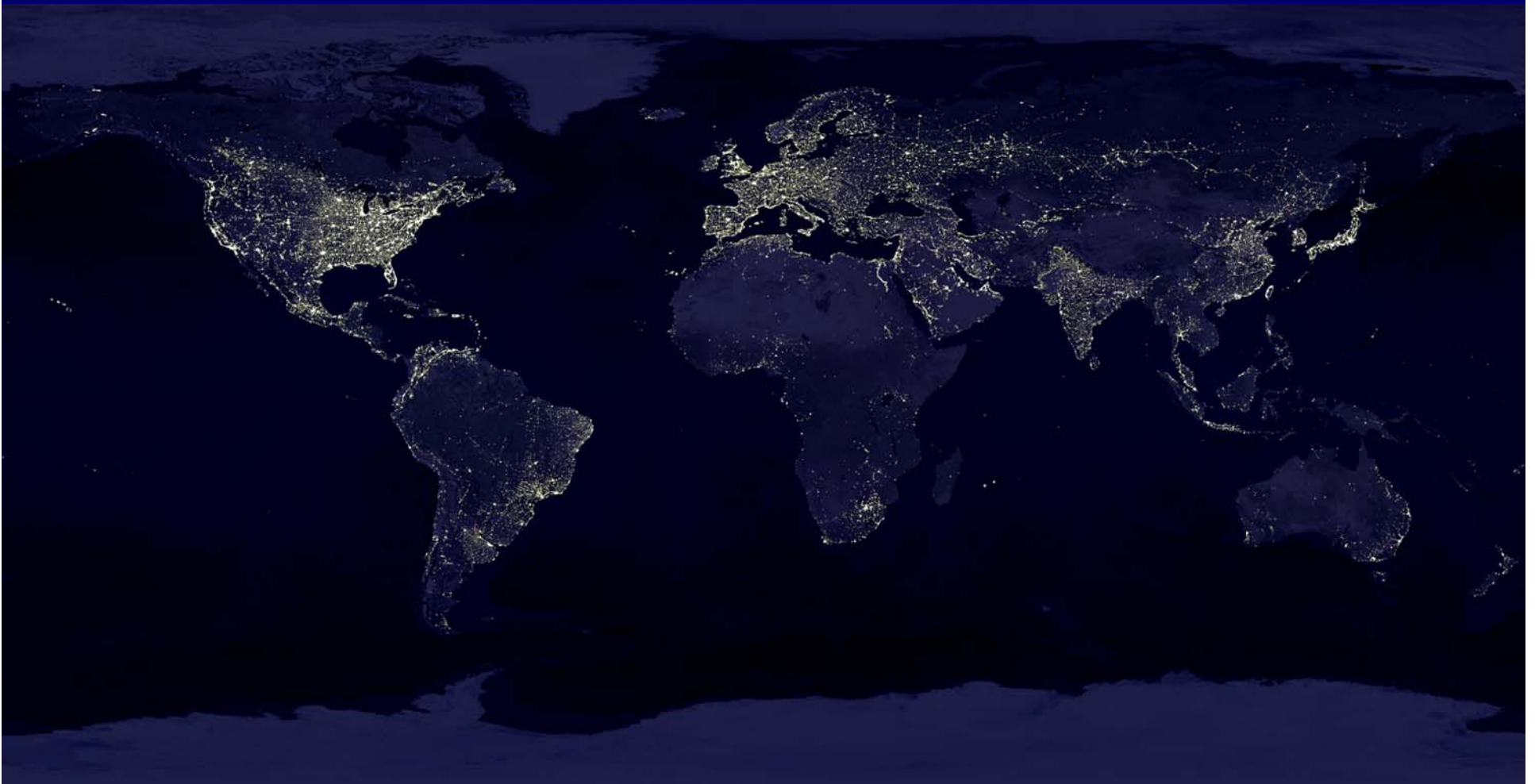


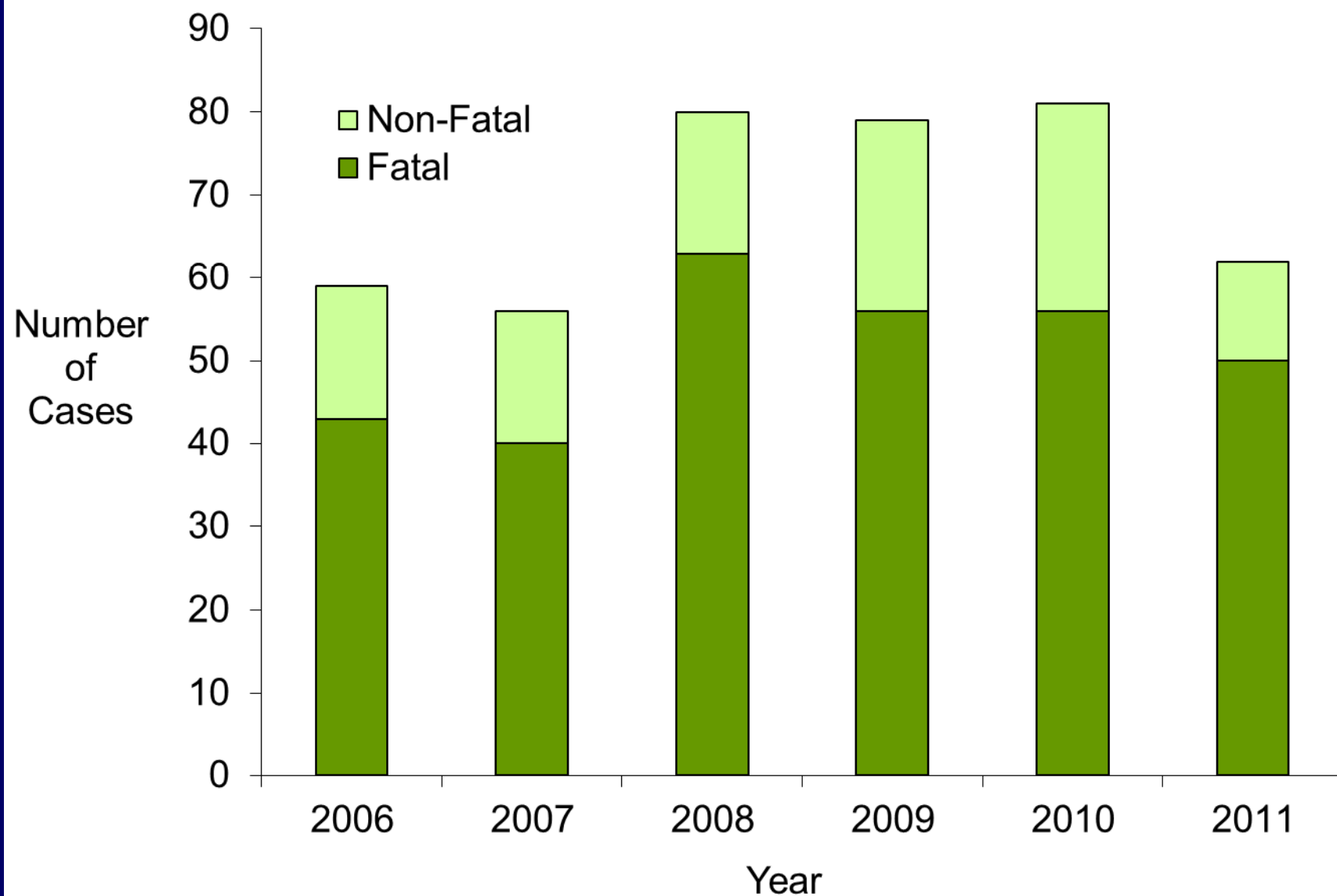
METHODS

- DAN developed a dedicated database to collect breath-hold incidents from 2004 forward
- Cases are identified through automated keyword internet searches and voluntary submission
 - incidents are followed up as staffing allows
- We reviewed cases from 2006 through 2011
 - data reported as number of cases &/or mean \pm SD with ranges

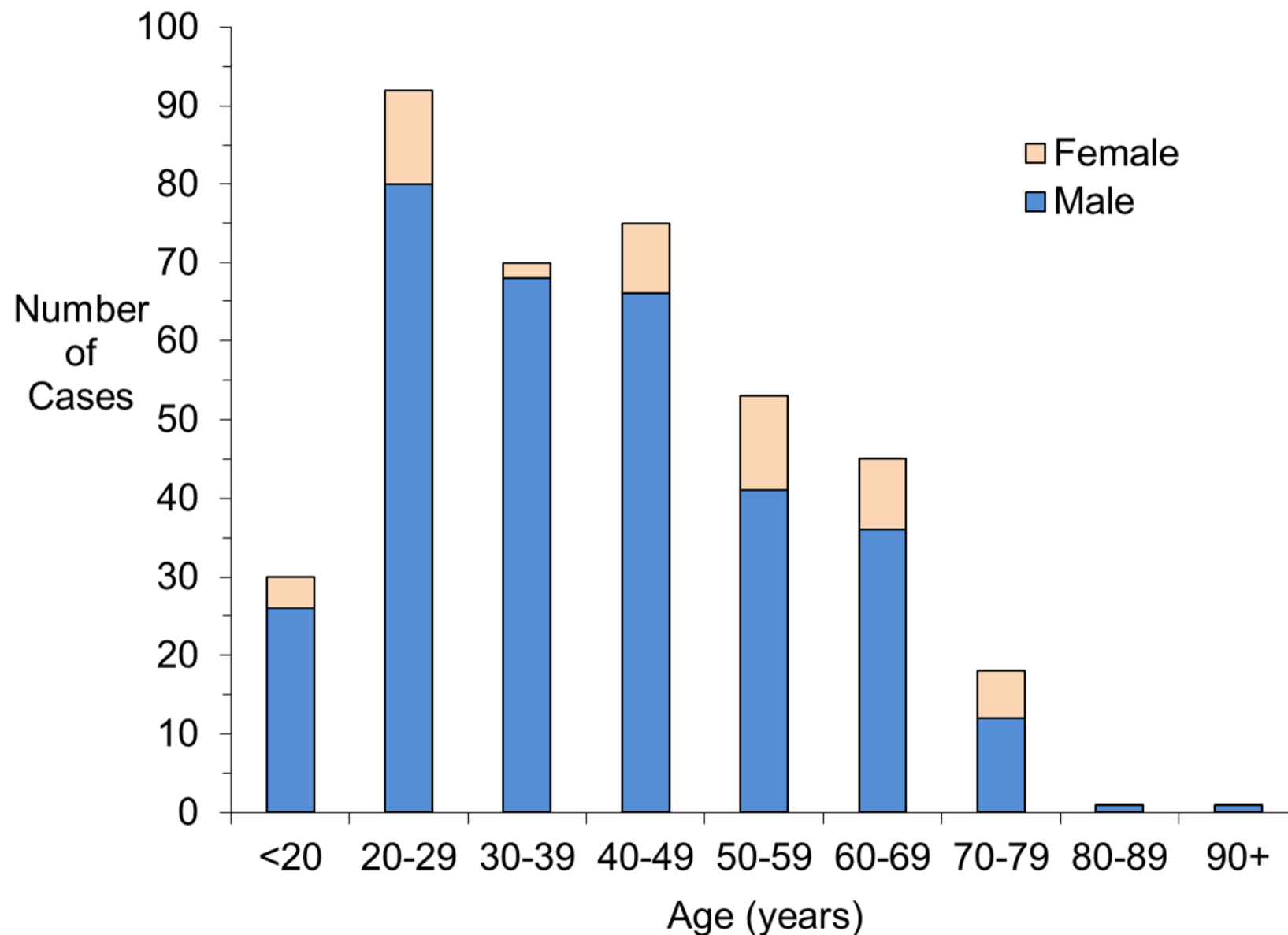
RESULTS

- Incidents reported from 56 countries
 - 46% in America; 11% in Australia; single digits elsewhere

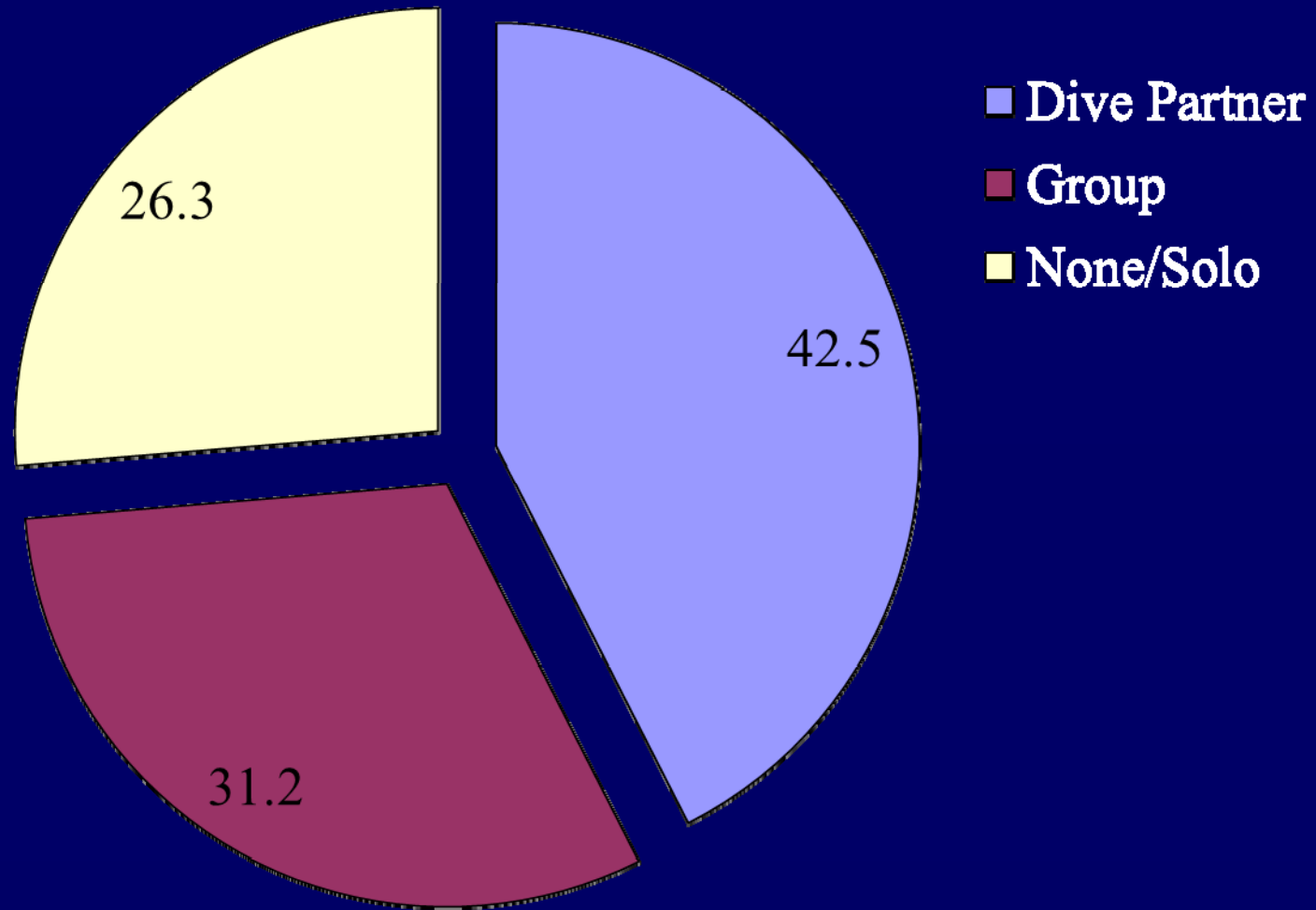




Case capture by year (n=417; 308 fatal, 109 non-fatal);
 51 ± 9 (40-63) fatal cases annually.



Age and gender distribution of incident victims (n=385).
Mean age 41 ± 17 (5-93) years; 86% male (92% known).



Dive support available to victims (n=247) (59% known).
Body of water: 90% ocean, 4% swimming pool (94% known).

RESULTS

- Witnesses were present in 61% of cases (64% known)
 - but generally with incomplete details of the event
- **Disabling injury**
 - most obvious with acute animal or boat trauma
 - and likely to be reported
- **Disabling agent**
 - most common was loss of consciousness
- **Trigger**
 - frequently impossible to confirm in fatal cases
 - health issues often implicated for older victims
 - excessive hyperventilation was most frequently suspected



Hyperventilation and lung packing prior to dynamic pool trial.



Loss of motor control (LMC) following dynamic pool trial.

CONCLUSIONS

- Breath-hold incidents frequently present with incomplete history and poor physical evidence
 - excessive hyperventilation is the most commonly identified risk
- Additional information is required to identify triggers and disabling injuries
 - detailed reporting needed to improve our understanding



INCIDENT REPORT

Intro

Step 1
Incident

Step 2
Victim

Step 3
Lifestyle

Step 4
Experience

Step 5
Trip

Step 6
Details

Step 7
Additional Info

INCIDENT REPORT

ABOUT

Divers Alert Network (DAN) has maintained a diving incident database since 1989. Originally it was limited to scuba diving incidents. This on-line reporting system is designed to include breath-hold diving incidents. In addition, rebreather incidents will now be reported separately from scuba incidents.

INSTRUCTIONS

Persons reporting cases are not required to provide their name and contact information. The information is requested to facilitate follow up if warranted (and if the person grants permission for contact to be made - asked as one of the final questions). The results of our data collection and analyses are made public for the benefit of the community. Data are released only in anonymous form. No individual shall be identified in the reviews of cases presented verbally or published.

We appreciate your time and effort in providing this information. The incident collection instrument is divided into eight steps/tabs each with a series of questions. The time required to complete the forms will vary with the amount of detail available and the complexity of the case. Hidden fields will appear if responses prompt the need. Each tab will be saved automatically when you select "Submit and Continue." After saving a tab, you will automatically be moved to the next one. You will be able to move forward and backward through saved tabs to make any necessary changes until you select "Done - Submit Incident Report" on the final tab. At that time, you will no longer be able to return to the case.

Please let us know if you have questions or problems concerning this process.

GETTING STARTED

FIRST NAME:

LAST NAME:

EMAIL:

PHONE:

INCIDENT: ☒ Incident happened to me ☐ Incident happened to someone else



MEASUREMENTS: ☐ Imperial ☐ Metric

DIVE MODE: ☐ Breath Hold ☐ Rebreather

Submit and Continue

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New online incident reporting system now operational
<http://DAN.org/IncidentReport>