

Scuba Clearance To Dive

Background

1. General information
 - SCUBA-self contained breathing apparatus
2. Web sites
 - Diver's Alert Network (DAN)
 - www.diversalertnetwork.org
 - Professional Association of Diving Instructors
 - www.padi.com
 - National Association of Underwater Instructors
 - www.nauai.org
 - World Recreational Scuba Training Council
 - www.wrsc.com
 - ScubaDoc's Diving Medicine
 - www.scuba-doc.com
3. Demographic information:
 - www.padi.com/scuba/about-padi/PADI-statistics/default.aspx
 - 538,782 Entry Level Certifications for 2008
 - 393,704 Continuing Education Certifications for 2008
 - Median Age for Men was 30 during 2002-2008
 - Median Age for Women was 27 during 2002-2008
 - Men: 65-67% during 2002-2008
 - Women: 33-35% during 2002-2008
4. Pre-existing condition information
 - www.diversalertnetwork.org/medical/report/2007DANDivingReport.pdf
 - Project Dive Exploration collected data on 1,181 divers, 3,062 dive series, and 15,056 dives in 2005
 - Chronic allergies 15%
 - Hypertension 8%
 - Ear/sinus problems 6%
 - Psychiatric, ear/sinus surgery, back surgery, and heart disease 2% each
 - Diabetes <2%

Pathophysiology

1. Pathology
 - Multifactorial
 - Direct trauma
 - Exacerbation of pre-existing condition
 - Environmental
 - Barotrauma
 - Decompression Sickness (DCS)
 - Physical
 - Envenomation
 - Trauma
 - Musculoskeletal injury
 - Heat/cold - medical effects of exposure
 - Underwater
 - Drowning

2. Incidence

- Project Dive Exploration from 2007 DAN Diving Report
 - 95% of dives are uneventful
 - <3% of dives involved difficulty equalizing middle ear pressure
 - <0.5% vertigo, seasickness, or headache
 - 2.8 cases of DCS per 10,000 dives
- DAN fielded 5,645 calls from around the world from 4/6/2006 to 12/31/2006
 - 29.2% of all calls fielded by DAN in 2006 involved questions regarding Fitness to Dive
 - 11.3% DCS
 - 6.8% Middle ear barotrauma
 - 5.5% Trauma or infection
 - 4.9% possible DCS
 - 3% Envenomation
 - 2.2% Pulmonary barotrauma

3. Morbidity

- DAN fielded 1,301 case-related calls from 4/6/2006 to 12/31/2006
 - 29.2% of calls was for information on fitness to dive
 - 29.2% of calls was for non-specific information
 - 65% of cases were male
 - Age distribution was 43 \pm 12 years
 - Medical history recorded in 514 cases
 - 52 had prior Cardiovascular condition
 - 20 had prior DCS
 - 10 had prior Psychiatric condition
 - 9 had prior Respiratory condition
 - 6 had prior Neurological condition
 - 4 had Diabetes

4. Mortality

- 167 deaths in 2005 (most recent data available)
- 55 of these fatalities were evaluated by a coroner
- 51% of deaths were due to drowning
- 16% of deaths were due to acute heart condition
- 15% of deaths were due to asphyxia
- Demographic information
 - 89 recreational divers from US and Canada
 - 82% of males were older than 40
 - Median 50 years old
 - 80 % of females were older than 40
 - Median 43 years old
 - Predominant conditions were hypertension and heart disease
 - Other conditions include asthma, diabetes, back pain, kidney disease, prostate cancer, and hemochromatosis

Diagnostics

1. Fitness to dive
2. Disqualifications
3. Neurological
4. HEENT

5. Respiratory
6. Cardiovascular
7. Gastrointestinal
8. Musculoskeletal
9. Genitourinary
10. Hematology
11. Endocrine
12. Dermatology
13. Heat stress/heat stroke

Patient Education

1. www.diversalertnetwork.org
2. www.padi.com
3. www.nauai.org
4. www.wrstc.com
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