

## BOOK REVIEWS

### FIELD GUIDE FOR THE DIVE-MEDIC

C Gordon Dougherty

Coastal Aquatics Publications, 8807 Wildridge Drive, Austin Texas, 78759 USA.

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This updated (second) edition should prove to be useful not only to its specific constituency of Diver-Medics but also to the many who go on diving expeditions and cruises out of reach of rapid attendance by an appropriately trained medical practitioner. It is written in a concise and clear manner, as is to be expected from an author with extensive experience in advising several of the large employers in the off shore oil industry and involved in the training of diver medics.

Because the target readership has received intensive training in emergency medicine before being given responsibility for the care of others on an oil rig or a drill ship, there is omission of some basic first aid advice, such as the management of limb fractures or a treatment flow chart stating that control of any significant bleeding is a priority. Nevertheless the text gives advice on a wide range of problems which a dive leader out on the Barrier Reef might have to face. There is advice on burns and on abdominal pains in addition to the specifically diving-related problems. Perhaps surprisingly (considering the number of women who are now employed as professional divers) there is no mention of any gynaecological problems. Possibly this will be included in the next edition. Till then you will have to rely on step by step advice given over the radio to manage an unexpected labour!

Despite the present day shore-based medical support via radio for the lay person with the responsibility for some medical problem, there is still a great similarity with the situation faced by the Master of a sailing ship in days of old. He (there were no female ship's Masters then) was armed with a limited stock of medications, a book of basic medical advice, and awareness of the responsibility devolving on himself.

If you have the responsibility for a group of people, you should plan for medical and other emergency situations. As others have undoubtedly said, "it comes with the territory". This book should make the problems easier to manage. While it does not aspire to be encyclopedic in the range of medical problems it covers, it nevertheless is far more than a book dealing solely with the management of diving emergencies.

Being intended for on the spot use, the book has been made tough by being printed on Kimdura plastic, which looks like paper but has a better resistance to a diver's wet fingers. Its spiral binding ensures that it lies flat open at the chosen page. It is book worthy of a place alongside a simple first aid book, in the medical kit of any diving expedition.

There is a special piece of good advice at the end of the preface to the first edition, reprinted in this edition. "The mature, prudent medic will always get advice when he is in doubt". Marry this to the advice on the cover of "The Hitch Hiker's Guide to the Galaxy", ("Don't panic") and you should be a great comfort to those seeking your care.

Douglas Walker

## SPUMS ANNUAL SCIENTIFIC MEETING 1992

### MEDICAL PREPARATION FOR DIVING THE GREAT BARRIER REEF

Michael Rooney

Is medical preparation for diving on the Great Barrier Reef (GBR) any different from medical preparation for diving anywhere else? The diving that is done on the GBR falls into two categories.

#### Scientific diving

Scientific research accounts for approximately 10,000 logged dives per year. The type of diving usually falls within

the limits of "sport diving" tables. Most research organizations require their divers to undergo yearly medical examinations to a standard similar to AS 2299.

In June 1992 there was no general consensus as to what standards should apply to which divers. My opinion is that if diving is a work activity for which the scientist is paid then the medical should be current, progressive and as thorough as is practical.

#### Recreational diving

Approximately 1,000 tourists perform two scuba dives every day of the year on the GBR. This figure is consistent with the fact that commercial diving operators

require 800,000 tank-fills per year. Most of these dives are performed by novices under the care of instructors. Most of these divers spend two days on the reef, obtain their open-water certification and then do no further diving.

In 1990 I commenced my own follow-up survey of people whom I had seen for diving medicals. A comprehensive questionnaire regarding the dive course, the medical, and subsequently diving history was sent to them 12 months after I saw them.

The response from around the world was good and it provided some interesting information. In a tourist orientated location such as the GBR less than 5% of the people who had taken dive courses had done any further diving since being certified. Diving on the GBR was just part of their holiday and they regarded it as a tourist activity and not the beginning of a new form of recreation.

Given that the first group consists of experienced divers and the second group are in the care of competent instructors who can usually take good care of their charges, how rigorous does the medical preparation have to be?

### **The medical**

It is not my intention to repeat what is readily available elsewhere. Readers are referred to "The SPUMS Diving Medical" published in March 1992.

It should be stressed that while that document is understood by physicians who have an understanding of the physics and physiology of diving, it does not necessarily have the same significance for clinicians without training in underwater medicine. For example, I have seen a medical certificate given to a novice diver which read "Fit to Dive but not to go too deep". While this proviso is well-intentioned and makes sense to the non-diving doctor and the aspiring diver (who just happened not to be able to equalise his ears under pressure), it is exactly the wrong advice.

Personally, I cannot remember the last time that I certified an applicant as permanently unfit to dive on the result of the medical examination. This is partly due to the fact that the dive schools in my area are aware of my standards and their staff first ask a few relevant questions. But more significantly it is due to the medical history that I take.

Perhaps all the dive shops know which applicants not to send in my direction. I am fortunate to be in an area where the diver training industry is not as large as elsewhere and most of the operators rely on good reputations and word of mouth referrals. I know of only one dive school in this area which specifically directs its customers away from me because, in the operator's own words, I "do the job too well, and that's no good for our business".

### **Who needs a medical?**

Under present Queensland law, anyone who is about to undertake a diving course must have a current medical certificate. Less than 5% of the people whom I see for recreational diving medicals have any intention of taking up scuba diving as a regular pastime. For this small group there is no doubt in my mind that a medical assessment before starting diving is an excellent idea.

But what about the remaining 95%? Most of these are tourists from overseas. Surprisingly, most regard the medical as "a good idea". This opinion however is inconsistent with their other comments ranging from "an inconvenience, a waste of time, an unnecessary extra expense and something which may prevent them from undertaking one particular aspect of their planned around-the-world trip". It is interesting to note that the people who think it is "a good idea" are the ones who least need any medical advice and the strongest objections come from those who most need it.

I personally find it distressing to tell a tearful young lady who has specifically come to North Queensland to learn to dive on the GBR that Ventolin and compressed air are not a healthy combination. What makes it even worse is that she could have learnt to dive back home in England, come here with a C-card and done whatever she wanted to. An even worse situation is where the super-fit triathlete who is going to prove that his asthma is not going to ruin his life storms out of the office with the statement "Well I'll just go to Cairns and not mention asthma on the form". I do not see a solution to this problem while the legal requirements remains as they are. If a tourist intends scuba diving no matter what, then giving false information on a questionnaire is not going to worry him or her.

How do we reconcile the situation where someone undertaking a course has to have a medical while someone who is doing a one-off "resort" dive only has to fill in a questionnaire? The only way I can make sense of this situation is that the resort diver is closely (and usually very competently) under the care and responsibility of an instructor. But as stated before, this also applies to 95% of tourists who undertake a certification open-water course. Does this mean that the medical is unnecessary for the 95% of tourist divers? I can only make the comment that once a diver has a C-card in his possession he is legally entitled to go out and take his own risks without an instructor around to keep him out of trouble.

### **What is the role of the diving doctor?**

Unfortunately, to my mind, the duty of the diving doctor is to put a signature on a legal document which states that a person may/may not undertake a particular activity. While this has some merit in situations where an individual's actions have an effect on other individuals or the general

public, I do not see it as the doctor's duty to play policeman where an individual should be taking personal responsibility.

I see the diving doctor as being in a unique position to give the people who consult him for an opinion as to their particular risk status.

Rather than saying that the candidate may or may not go diving it seems more sensible to me to let the people concerned make responsible, informed decisions. Given an appropriate medical opinion, a reputable dive school will not take responsibility for an unnecessarily high risk. The diver training organizations will not support a school which takes unnecessary risks, and finally, the insurance companies will not support a training organization which takes unnecessary risks. Money is always a good persuader.

If a medical is to be performed it should be taken seriously. I frequently see patients for diving related illness who comment on how long they had to wait while I was doing another medical (usually about thirty minutes). When I tell them that this is fairly average for recreational divers they respond with "Gee Doc, mine only took two minutes". Not surprisingly they are not returning to the same doctor to have their problems attended to. My favourite illustration of this situation was a professional musician with severe bilateral middle ear barotrauma who noticed during her three minute medical that her pulse and blood pressure had been recorded without having been taken. Her tympanic membranes had not been inspected and I would have been more than happy to support her in any legal action had she wanted to take any. I believe it is most important to keep an accurate record of the history and examination for the purpose of comparison if the diver has problems later.

The problem with a discourse such as this is that it is preaching to the converted. The message needs to be delivered to the consumers, the 400,000 recreational divers who visit the GBR every year. Unfortunately there will always be consumers who want to "save a buck" where possible, and operators who want to "make a buck" no matter what the risk. Unfortunately some people hold the view that anyone who can pay \$350.00 for the dive course is medically fit to dive.

Very rarely do I see diving morbidity which is due solely to a medical problem to start with. The diver who perforates an eardrum while diving with a cold and the diver who gets decompression sickness after five dives in one day demonstrate the two major causes of morbidity. Neither is medical. They are greed and stupidity.

*Dr Michael Rooney's address is Townsville Diving Medicine Centre, 2-10 Walker Street, Townsville, Queensland 4810, Australia.*

## CORAL CUTS AND ABRASIONS

Vic Callanan

Many corals have a sharp edged hard exoskeleton which often cuts or abrades human skin, sometimes after surprisingly little force. Early treatment is often ignored as the injury is deceptively mild, but significant morbidity may result from even slight coral contacts.

### The injury

The abrasion or laceration often looks clean initially, however there are many possible contaminants occur including slime and mud, nematocysts, coral polyps, pieces of hard coral and salt-water bacteria.

An early tissue reaction with itching and stinging is often seen within a few hours. This is usually mild and is probably due to inflammation from nematocysts and other contaminating toxins e.g. slime. If no infection occurs and no foreign bodies remain embedded the swelling, tenderness and erythema settle in 3 to 7 days.

If untreated the wound may progress to a significant injury. Continued exposure to the marine environment favours progress of the lesion due to skin maceration and further contamination. Two complications, alone or in combination, often occur, sometimes despite adequate early treatment. Firstly, infection by either skin organisms or marine bacteria and secondly, foreign body reactions from implanted coral fragments.

The lesion becomes very swollen and tender and may show ulcers with a sloughing base. These are often very slow to heal and become chronically infected. Regional lymphadenopathy is usually present. These lesions eventually heal with scarring and may be subject to recurrent breakdown if foreign material remains in the wound.

### First aid

Correct early treatment is important for even apparently mild injuries.

- 1 Stop all bleeding, usually by direct pressure.
- 2 Remove all coral fragments. Wash and scrub the wound with clean warm water. Do not use sea water as this may introduce more contamination. Use a soft brush e.g. toothbrush. If this is not possible because of the extent of the injury or because the victim is a child then seek early medical advice as local anaesthesia may be necessary.