

## THE WORLD AS IT IS

### NOT IN FRONT OF THE CHILDREN, PLEASE !

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#### Key Words

Diving medicine, medicals, research, training.

It is probably common to all cultures for certain matters to be regarded as not for the ears of the young, or those who are still uninitiated. This is true not only in family situations but also in all trades and occupations, even the medical fraternity. It is a common criticism of the Learned Professions that they frequently fail to explain matters fully to lay persons when they discuss their problems with them and give advice. There are a number of reasons for this including inability to communicate easily with those whose understanding of the topic is limited. However the least noble is attempting, consciously or otherwise, to keep the expert's lack of exact knowledge and understanding from becoming too obvious. While there are dangers in setting aside the aura of omnipotence and mystery which so greatly enhances the effect of utterances from Authorities there is more danger to the recipient if expert advice is too uncritically accepted as irrevocably correct. All Authorities are human and can make mistakes. While this is possibly most evident in connection with legal opinions, it can occur even in the medical environment. This essay is an attempt to define some of the matters in which, just possibly, criticism could be levelled at the involvement of doctors in Diving Medicine.

There has always been an uneasy relationship between divers and the medical profession. The former wish to obtain advice to make their diving practices safe, but do not welcome any restrictions. What is undeniable is that some conditions make diving more hazardous. Some are medical conditions, others are environmental or equipment caused and some are due to the diver's inability to dive safely. The parties were at loggerheads for many years because of the tendency for those regarded as Authorities in diving medicine to assume they had an absolute understanding of the problems of divers, married to which was their assumption that any discrepancy between fact and theory was the result of the untruthful and unreliable nature to the divers' reports. This was particularly noticeable in the field of decompression sickness (as it was then the practice to call it), as the Experts "knew" that the dive tables, being constructed by mathematicians and tested on naval divers, were safe and therefore "safe" dives never resulted in symptoms. These beliefs held back progress for decades and it probably still lingers on because divers naturally seek to put the best gloss on their activities they can, and have

certainly have no greater desire to reveal their mistakes than do any other group of people.

The medical profession was, in some ways, hoist by its own petard when diving problems were taken under its wing. When medical supervision of diving was limited to naval divers, the results of medical disqualifications, excellent training and careful supervision appeared to back the experts beliefs. However, it became obvious that medical disqualification had little influence on diving accidents in recreational divers. But because diving medicals had been promoted as a means of reducing diving accidents, diving organisations and lawyers rapidly accepted the medical claim to be able to decide whether or not a person is "fit to dive" as a way of avoiding any blame arising from a diving accident. The present vogue for requiring evidence-based medical decision making may in time mitigate this.

It has never been, nor will it ever be, true that the medical profession could decide that a person was fit to dive because there are so many interacting factors in any misadventure and the strictly medical ones are only rarely the most significant. However, the fact that different countries have been long known to have radically different views on the matter of diving medical standards without evidence of differing diver morbidity has not noticeably influenced opinions or led to questioning of shibboleths. Dick Smith has talked of "affordable safety" in relation to aviation (and was howled down by the unthinking) and similar choices exist in regards to every human activity, including the degree of restriction divers are willing to accept, whether it be in relation to health factors, gas mixtures, choice of tables, or any other matter, in order to make their diving activities safer.

It is a stated purpose of our Society "to promote and facilitate the study of all aspects of underwater and hyperbaric medicine. To provide information on underwater and hyperbaric medicine". How completely do we fulfil this noble objective? The Society's Committee has in the past made pronouncements on the inclusion of out-of-air ascents as being essential in basic training without any evidence that these do in fact improve the student's chances of survival when they run out of air. There are no statistics, nor is there any likelihood of any, as about half those who die from running out of air die alone. What we need is the collection of reports of low/out-of air events, ranging from those so adequately managed that there was no problem to those where morbidity occurred. These should then be analysed to ascertain why the situations arose, how they were managed and the outcomes. But that is a pipe dream as medical diving training guidelines (Australian Standards) are regarded as having validity, in a Court of Law, as being what an informed and careful medical practitioner would do.

In Australia there is, unlike the situation in the UK, no way to formally question or challenge the Standard except through a duel between competing expert witnesses in a Court of Law. While the Standards are good guidelines, they are too rigid to be a binding rule because they fail to take into account the imprecision of our information. Indeed personal experience and gut feelings still appear to wield far greater sway in the decision making process than does appeal to actual case data in these two important opinion areas (value of out-of-air ascent practice in the present basic training courses and validity of our Medical Standards for safe diving). SPUMS made a welcome change to its medical advice, by recommending giving the diving applicant advice on possible medical risk factors rather than stating baldly that he/she is medically fit/unfit to scuba dive, in 1995. But the legal fraternity will take much convincing before it releases doctors from the assumption that they have given a yes/no decision on the medical fitness to dive of the person they have examined. Doctors are often forced to make decisions based on inadequate data and are influenced in reaching their decisions on management by a necessary reliance on protocols which may themselves be based on insufficient data. We should always remain aware of this factor when we are giving advice or stating our opinions.. It is time that it was clearly recognised that the morbidity expectation of any given diver could possibly often be better predicted by Tarot cards than the medical findings. Unfortunately no financing body has provided funds to make this hypothesis the subject of a rigorous double blind investigation!

To be serious, it is time for systematic collection and analysis of the range of factors present in the many types and degrees of diving misadventures. We do not know the "natural history" of divers with asthma (and this label itself has a wide range of definition and significance in practice), or diabetes, or cardiac conditions. We do not know because nobody has taken the trouble (and it will indeed be a difficult task requiring the involvement of many Society members) to obtain the data. Few, so far, have been willing to accept the odium associated with investigating factors which "so very obviously" preclude acceptance as compatible with safe diving. At the present time, in general, we know only of instances where the medical condition and some misadventure coincide, rarely indeed do we hear of those persons who have some "adverse" condition but in whom no misadventure has occurred.

In the matter of reaching a reasoned conclusion on the value of out-of-air ascent practice, there is need to create a wide ranging collection of data describing incidents where an out-of-air situation has occurred in order to identify why it occurred, what was the response, and what the outcome. My investigations have been limited to where the outcome was fatal and have therefore failed to address the problem adequately. Here is a situation where co-operation between the diving fraternity, instructor organisations, and those collecting data on diving incidents

could lead to a pooling of resources to the benefit of all divers. Similarly there is a need to have an impartial and medically confidential assessment of why cases of DCI, and even deaths, sometimes occur during training. Although the Queensland Workplace Health and Safety (diving) inspectors are attempting to investigate misadventures in divers their work is hampered by the perception, true or false, that they are have a police function and are seeking crimes to prosecute. This perception results in delayed and probably gross under-reporting of problems.

It is time the diving industry recognised the value and importance of research into factors associated with misadventures affecting their clients, even if they are not too worried by such matters affecting their members. The "don't do in" mentality in the Australian diving industry has undoubtedly contributed to the occurrence of the recent double fatality, the loss of the Lonergans while diving, with others from a commercial dive boat, on the Great Barrier Reef. The aviation industry has a scheme for reporting-without-retribution (unless the law has been seriously breached) and such a scheme would be of great value to the diving industry. Indeed it is long overdue.

One problem with obtaining data is partly due to the efficiency of the equipment used when diving. Another is the commercial imperative to minimise any comments on the possible dangers in order to encourage members of the public to dive. These combine to make safety appear far too easy to maintain. There is also the fear of rocking the boat by revealing that there exist some serious differences of opinion, that questions have been ducked which cast doubt on accepted dogma. Inexperience is without doubt a critical factor in the safety equation and some divers appear to be dangerously unaware of their true level of ability. It is time we diving doctors made it clear to both divers and potential divers the limits on our knowledge and the narrowness of the safety margin. It is time for us, both members of the Society and others in the diving community, to research the above critical factors and to speak more honestly about both the limits of our medical ability to prevent morbidity and the fact that we cannot always completely reverse DCI damage. It is time to share our information and to talk honestly to general diving community, the "children" we seek to keep in ignorance about the limits of our knowledge, and enlist them in our continuing search for accurate information, the foundation on which to build to improve diver safety.

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