

To encourage discussion of the medical cum moral questions involved in bestowing a medical curse or (modified) blessing on would-be divers with a history of asthma, a few clinical situations have been constructed:-

Case A: A youth aged 18 asks your advice concerning his skindiving (breathhold) activities. He describes having severe asthma attacks dating from whooping cough at the age of 3 years and they are still a major problem. He likes to go camping and the cool Melbourne nights aggravate his symptoms. He has, however, practiced skindiving despite tiredness after nights disturbed by breathing problems and suffered no ill effects. He wishes to know whether it is safe to continue breathhold diving,

Case B: A young man aged 20 has tried out scuba diving with a friend and now wishes to have a medical check before taking a course. He mentions that he has had asthma from childhood but never let it prevent him spearfish. He denies any problems while scuba diving but admits that track work, undertaken to improve fitness for Australian Rules football, causes asthma. His practice is to continue running until the attack passes, despite his lungs feeling "like a red hot poker, particularly in the upper lung". What advice would you give him?

Case C: The applicant is aged 35. He has been diving for several years with scuba and now intends to obtain formal certification. He gives a history of asthma from childhood which he did not let prevent his activities despite chest pain when running. He claims that he no longer gets asthma attacks and that the chest symptoms associated with running are "only a burning in the upper chest and trachea". He has recently moved to your area, the coast of NSW and has noticed some chest tightness when there are humid north easterly winds. He practices jogging without troubles resulting. It is admitted that if tired or he has dived several times (scuba) in the day he may experience a burning feeling in his throat and upper chest, but he never becomes tight in the chest or breathless. His FEV₁/FVC is well below 75%. Would you pass him as fit to scuba dive on his proven ability to dive safely, or refuse a fitness certification on the health history and low expiratory flow % result.

Case D: A man of 41 years, diving with scuba for 22 years without diving problems, wishes to attend an instructor Certification Course. For this he requires a medical certificate stating that he is fit to dive. He has a history of severe asthma in childhood which has gradually ceased to trouble him, though there may be a burning sensation in his upper chest and throat. He has never had an attack during diving. When he first started diving with scuba it was the accepted wisdom that Free Ascent should be part of any reputable course of instruction and he had made numerous such ascents from 30 feet. He has even made a practice ascent of 115 feet in Kilsby's Hole, Mount Gambier. It is obvious that he suffered no misadventures from such ascents. Examination reveals that the clavicles are

deformed through the constant lifting of the chest in the fight to breathe during asthma attacks while young. The vitalograph shows FVC 7.8 litres and the FEV₁ 4.8 litres. There is still liability of an asthma response, in particular after contact with horses or cats. Grass produces severe hay fever. Would you give him a Certificate of Medical Fitness for scuba diving?

The above problem situations are based on actual facts and are offered to illustrate the nature of the difficulties which will arise once any exceptions are allowed and Fitness to Dive Standards are treated as a guideline rather than absolute and unbreakable. It will be harder to give fitness assessments without the comfort of being able to regretfully blame the "they" who produce standards for a refusal of a "fit to dive" certificate. Perhaps we must first decide the purpose of such assessments. Are we seeking to protect the applicant or to distance ourselves, and the diving instructors, from legal action should ill health be implicated as a factor in a diving accident? Should there be a certificate stating that certain unsatisfactory factors are present, the applicant has been made aware of them and that he can dive at his own risk but has been advised against such action? The devising of a document which would stand discussion in a Court of Law would be difficult. Should instructors and doctors be expected to "stick their necks out" for the borderline fitness cases in these days of litigation? These matters are deserving of thorough discussion.

NEAR-DROWNING AND SUCCESSFUL RESUSCITATION AN EXAMPLE OF THE DOUBLE JEOPARDY RISK FOR ASTHMATIC DIVERS

*Contributed to the STICKYBEAK NON-FATAL
INCIDENTS FILE by Peter Horne.*

An untrained and inexperienced diver, using hookah diving apparatus for the third or fourth time, unexpectedly lost his air supply in 10-15 feet deep water. He was overweight and unable to remain at the surface. One buddy brought him to the surface and the other pulled him to land. He was found to be unconscious, not breathing and without carotid pulse. CPR was successful after 4-5 minutes but he developed an acute asthma attack about 15 minutes later, while still being observed. He had just recovered consciousness and indicated need for inhaled medicine. The spray pack was empty but fortunately another person, who had come to give help, had a similar spray. He was taken to hospital to continue treatment. He was allowed to return home about one hour later, when he said that he felt better. He felt unwell the next day, so rested. The following day he went to work but felt unwell, developing trembling and nausea in the evening. He was readmitted to hospital and remained there for thirty six hours. No residual ill effects have been noted.

Case History

Three divers were returning from a sea dive (using hookah) for crayfish and abalone. They decided to wash their apparatus in a freshwater pond often used by divers and to use the opportunity this offered for the least experienced member to practice ear clearing under controlled conditions. None of them had received formal instruction but they had a knowledge of diving theory. This diver had asthma and therefore could not obtain the medical clearance necessary before acceptance by a qualified instructor. However it is not known whether he had approached anyone about instruction. While he practiced clearing his ears at different depths in the pond his two buddies remained with the compressor on the pier to make sure that the airline did not kink or become fouled. There were a few snorkellers on the surface of the pond at this time also.

The diver suddenly found himself without air. He cannot be sure what occurred but possibly a snorkeller caught the floating line and the sudden pull caused him to lose his mouthpiece. He found himself without air and 10-15 feet below the surface greatly overweighted. He did manage to reach the surface but his best efforts could not keep him there and he soon sank back to the muddy bottom. He was seen and diver 2 jumped into the water, wearing only a wet suit, while diver 3 started to tow him to the jetty using the airline, which was still attached to the weight belt. Due to his inexperience he did not regain the demand valve or drop his weight belt. He recalls seeing diver 2 near him and feeling the exit ladder before blacking out. His buddies thought he would be safe at the ladder but then noticed that he was unconscious and had stopped breathing. They got him onto the jetty, noted the absence of a carotid pulse and commenced CPR. Although some spectators when asked to assist walked away, they were fortunate that there was a group of divers nearby, one of whom had recently undergone first aid training in resuscitation methods.

After about 4-5 minutes of CPR the victim suddenly coughed and groaned and resumed spontaneous breathing. However a close check was maintained on him for another 15 minutes, until he regained consciousness. He was now stricken by asthma and was barely able to indicate that he required his spray medication. This was found to be empty but fortunately one of the spectators was an asthmatic and had his spray available. The police and ambulance, notified of these events, now arrived and the victim was taken to the local hospital to continue treatment of his asthma attack. When this had responded, and the victim stated that he felt better, he was allowed to go home. The hospital stay was about 1 hour.

The next day he felt it was best to stay at home but returned to work the following day, although feeling unwell. By the evening he was trembling uncontrollably and nauseated. He was admitted for further treatment in hospital 48 hours after the initial incident, being given injections for the nausea and for sedation (it is believed). This stay in

hospital was of 36 hours. No residual problems have been noted.

DISCUSSION

Not all divers recognise the necessity for instruction in diving from qualified instructors. Especially is this true for those who use hookah gear. Uninstructed and inexperienced divers are the group known to be at great risk should any misadventure occur, as it inevitably will from time to time. This incident records the sequence of events which may very easily follow. The victim was lucky to have alert and quickly responsive buddies who were skilled in CPR and also the presence of other persons able to help. His asthma history is unknown but his carrying of a spray medication indicates the probability of a significant problem. The fact that the spray was empty indicates inadequate forethought. The basic critical fact for discussion is whether persons determined to dive despite such a disability are better trained by, and advised to dive under the supervision of, experienced divers, or whether it is better to prevent them obtaining the benefit of professional instruction. It may be thought that the diver should have been retained in hospital for longer observation after suffering from first a near-drowning and then a severe asthma attack.

It is obvious that the lack of a C-card is no bar to obtaining diving apparatus.

IMPORTANT FACTORS

UNTRAINED. INEXPERIENCED. SUDDEN LOSS OF HOOKAH DEMAND VALVE. EXCESS WEIGHT. RESCUE BY BUDDIES. UNCONSCIOUS. NOT BREATHING. NO CAROTID PULSE. RESUSCITATION. ASTHMA ATTACK. ASTHMA HISTORY PRECLUDED QUALIFIED INSTRUCTION.

LOSS OF CONSCIOUSNESS IN A SCUBA DIVER ON THE SURFACE WITH SPONTANEOUS RECOVERY A CASE FOR DIAGNOSIS

From a report to the STICKYBEAK NON-FATAL INCIDENTS FILE.

Summary

A scuba diver became unconscious in rough surface conditions but survived to make a spontaneous recovery because his buoyancy vest maintained him in a face-up position while his buddy gave effective assistance by removing him from the danger area.