

Diver's Worst Fear

"What's that pain in my arm? Ah! I remember, I hit it on the boat."
"What's that feelings in my legs...I must have slept awkwardly."
Dr David Wilmot explains what could happen if these feelings turn out to be decompression illness ...

A diver's nightmare?

HOW MANY times have we put down signs and symptoms as explainable by other things, and how many times should we be thinking they might be diving related? We look at symptoms such as the ones above, then at our dive profiles, and more often than not we probably decide we have done nothing wrong. I am sure that many of us who have had those symptoms and realised they had missed stops on a dive, or done a rapid ascent, or been pushing the limits of their experience with long decompression dives, might be more worried about the possibility of decompression illness. A few may not.

It is probably one of the most frightening things to be aware of for most sport divers. We have all heard tales of wheelchairs and/or paralysis following diving decompression illness. Therefore in the course of this article, I would like to go through the scenario of what happens when somebody suffers decompression illness, from the initial diagnosis to treatment in a chamber.

So you think you have decompression sickness

The first thing to do if you think you have the symptoms, is to get medical advice by contacting a diving doctor, locally if you have one, or by ringing the coastguard and asking for help. The coastguard will put you in touch with your nearest decompression facility. Having spoken to the diving supervisor or a local decompression chamber, a decision will be made as to whether your symptoms are indeed a bend, or something more benign.

If necessary, they will then arrange for you to be transported to the nearest chamber, which will usually involve going to your local casualty department. You will then be picked up by either an ambulance or helicopter, to be taken to the nearest chamber (or if the incident occurs on the sea by lifeboat). If there is oxygen available at the site and you suspect a bend, use it. If possible you should go on to 100% oxygen, until such time as a doctor tells you that you don't need to. In the absence of 100% oxygen, a nitrox mix with a higher percentage of oxygen than in air is advised.

If you have somebody with you, tell them what is happening, why it may be happening, and what may happen in the near future. Then give them as much relevant

information as possible.

You also need to maintain adequate hydration, preferably using isotonic fluids, not teas and coffees, which tend to be diuretic and could potentially make you more dehydrated.

It is normal practice for the emergency services to lift a buddy with the affected diver; this is obviously applicable, if something acute happens on a dive trip. The emergency services feel that if one member of the diving party has been affected, there is a chance that the other one may also be affected. Therefore rather than have to come back and pick up the second one, they prefer to take them both to the chamber to be checked out.

Arrival at the chamber

On arrival at the chamber, you will be met by technicians and a doctor and made comfortable in the chamber area. They will then perform a series of examinations and tests to decide whether or not you are, or have, experienced a bend.

If you have been using one, they will also ask to see your dive computer. They will then look at your dive log to see if there is any sign of anything untoward in your profile to explain your symptoms. The examination itself is both physical and neurological. They will, as well as looking at your ears and listening to your heart and lungs, check things like balance and co-ordination, eyesight and eye movements.

Depending on the severity of your symptoms, the doctor concerned will then decide on a treatment programme and you will then strip or be stripped of your normal clothing and put into anti-static theatre clothes to be taken to a recompression chamber. A qualified chamber attendant will then be instructed to escort you into the pot, and will stay with you throughout the treatment.

Treatment

Modern chambers are quite large and spacious, but the portholes are very small, so most of the communication with the outside is done via radio linkage. Many chambers themselves do lack somewhat in creature comforts, but there are always facilities to go to the toilet and have food or medicines passed in or out.

Once the chamber door is secured, the chamber is blown down to a treatment

depth, and the patient will be put on a 'bib' which can be supplied with a treatment mix of either pure oxygen or a heliox mix. In some chambers they may use a head box, which is similar to a clear plastic bag that goes over the head and is then attached to a latex neck seal through which the oxygen is delivered.

The treatment normally consists of several 20-30 min periods of breathing on bibs with short breaks between. This serves two purposes, firstly to avoid acute oxygen poisoning and secondly to give the patient a chance to take fluids, medicine, or if need be to go to the toilet.

The attendant stays with the diver and monitors his / her/ their condition throughout. The attendant may be asked by the doctor, (who is usually outside), to do various other neurological tests and would also look after an intravenous infusion, should that be necessary.

Chambers can get very hot especially during 'blowdown' and it is with great relief that every now and then the chamber is blown-through with fresh air.

At the latter stages of decompression the attendant will also be asked to don the bibs, but don't worry, this is for his own decompression to make sure he doesn't get bent on the way back up to the surface.

Depending on the response to treatment, the chosen recompression table will be followed until arrival back at the surface at the pre-requisite time. If treatment isn't successful, tables can be extended, or even changed to alternative tables. On the completion of the treatment the diver is usually placed in a hospital ward for a period of 24-hour monitoring, checking for any signs or symptoms of a return of the problem.

Post treatment

This whole process can be frightening for the diver, as most people with little medical knowledge are very scared of medical procedures. The diver may come out of the chamber feeling a little washed out, weak at the knees, and a little confused as to what has gone on. It is important that at the time of the treatment, you get guidance from the doctors who have treated you, as to how long you should be off diving and whether you need to see a diving medical officer again, before you resume diving. You certainly would need your annual

medical form endorsing by a diving medical officer, after you have had treatment of this sort (the self-certification form).

There are recommended guidelines as to how long you have to be out of diving, but there are some variations according to whether you are a professional diver, or purely amateur sport diver. Sadly for some, the treatment will leave them with a handicap and may preclude them from ever diving again. Others having been scared by the whole procedure may voluntarily decide not to dive again. The treated diver may well be left with a lot of questions and most diving medical officers, on the sport diving medical panel, are only too happy to talk to divers, who have been through chambers. Indeed the doctors in the chambers themselves are happy to talk to divers afterwards, addressing any questions or queries they or you may have. It may also be recommended that the diver see a cardiologist to have a PFO test done (patent foramen ovale) if the bend is totally unexpected.

In conclusion

The whole experience of decompression illness is not pleasant. The treatment these days is very high tech, compared with 20 years ago and may involve the use of various gases. The professionals running the chambers are very good at their jobs and also very reassuring to the diver. They try to make the patient realise that these things can happen to the fittest and most careful of people as well as the unfit and

careless. Sadly that was not always the case in the past, when the chambers were manned by the navy; some divers did get a rather rough ride from the navy personnel running the chambers.

The chambers operators themselves are very happy to have visitors to look round their chambers and it might be worth thinking about a dry dive for the winter months, if you have a chamber somewhere nearby. There will usually be a small charge for this but as a club; you may feel it is worth it. It is an excellent opportunity of testing your depth gauge.

Recompression facilities are there for our safety, however the most important message is, prevention, dive to tables, dive conservatively, and try not to take risks. Don't push your limits, maintain your equipment well, and so that it shouldn't be a problem to you should you have to use that skill in an emergency, practice your diving skills in safe environments

Contact telephone numbers:
HMS Vernon: 07831 151523
Coastguard Emergencies: 999



Hopefully you will never need to see the inside of one of these - a decompression chamber

Davie Butcher 1951-2008

IT WAS WITH great sadness that friends and diving buddies of Davie Butcher learnt the news of his death. Davie was a man of the sea and had many talents. He devoted his life to helping others and was liked and respected by all who knew him. His enthusiasm and energy were infectious and he crammed more into his lifetime than most.

Davie learnt to dive at the Jordanhill Branch of the Scottish Sub Aqua club while doing his teacher training and, constantly keen to improve his skills and pass them on to others, he went on to become a First Class Diver and Instructor.

He worked on the Isle of Arran as an Outdoor Instructor and with John Orr trained many islanders to dive. However, always ready for a challenge, he gained fame by rowing across the Clyde to protest about the high ferry fares! A typical example of his fitness and sense of adventure.

In the late 1970s and early 80s having returned to the mainland to teach at Maybole Academy he served on the National Diving Council as Deputy National Diving Officer and National Diving Officer.

When he was diagnosed with cancer in 2003 his attitude was an inspiration. He

was determined to make the most of his remaining years and had over 150 more dives in Scotland and abroad, confounding the specialists.

Davie was Head of PE at Girvan Academy for many years and excelled at most sports including wind surfing, football, table tennis and golf. Indeed there were few sports that he could be beaten at! He also had over 20 years active service in the RNLi and was a valued member of the Girvan lifeboat being coxswain for many years. He used his diving skills on numerous occasions in connection with the lifeboat, often in difficult and dangerous situations.

In Girvan Harbour he was a well kent figure, having owned a variety of boats. A keen sea angler, his smoked mackerel was legendary! It was his lifetime experience of fishing and the sea along with his considerable reputation in the Ayrshire fishing community that led to his vital support of COAST and the campaign, which became a reality just days before he died, to make Lamlash a No Take Zone. COAST is greatly indebted to his help.

Deepest sympathy goes to Kath and his daughters Karen and Ali.

