

As an analogy, splints may be very valuable for treating people involved in motor vehicle accidents due to speeding. The answer is not to make splints more available, it is to stop speeding.

In a similar way, I would not argue against people using the underwater oxygen technique, when they develop decompression sickness. I would just prefer them not to require the first aid treatment.

C Edmonds

Key Words

Letter, decompression illness, treatment, oxygen

DIVING COMPUTER PROBLEMS

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2/1/96

Dear Editor

It is established practice to collect information about the diving history in cases of decompression illness. Depths, times, surface intervals, numbers of dives per day and numbers of days diving are all recorded. The presumed reason for the collection of this information is to make deductions about nitrogen uptake and elimination, together with adherence or not to the safer diving practices of making subsequent dives shallower and not diving too frequently.

These deductions have been based on the assumption of square profile dives and the relationship between actual dives and the precepts laid down in the various diving tables. Now, with the massive increase in the use of dive computers, the value of the information received has become questionable. Computers are now available for hire on most dive trips, while it is perhaps true that most experienced divers now own computers. The information recorded in the log book is still depth and time, but the depth is a maximum depth and the duration of the dive is well over that possible in a square profile dive. Every dive is a multilevel dive, so that, without intermediate depth and time data, nothing useful can be deduced about nitrogen and the probability of decompression illness. Without knowledge of residual nitrogen, surface intervals become meaningless.

Is it still safer to make dives progressively shallower? For example, the first multilevel dive could consist of a short excursion to 30 m, with the rest of the dive spent mainly at 10 m.

The second could have a maximum of 25 m, then “push the envelope” allowed by that particular computer all the way to the surface. Is this safe diving practice?

It would appear that the logged dive history of a computer diver is of little use when that diver develops decompression illness. We will have to stay in the dark until every bent diver arrives with a computer which can be interrogated by the desktop computer of the doctor. As those dive computers which can be downloaded have different interfaces and incompatible programmes, the waiting may be prolonged.

Tom Fallowfield

Key Words

Letter, computers, decompression illness, treatment.

SPUMS ANNUAL SCIENTIFIC MEETING 1995

DECOMPRESSION

Fred Bove

Introduction

This is a discussion of decompression theory, gas kinetics and tissue uptake to give an idea of the issues related to decompression, diving tables and the basis for the different tables, based on some general concepts one of which is that with increasing ambient pressure there is increased dissolved nitrogen in the tissues.

Physics

There are several physical principles which govern the movement of inert gas into and out of tissues, these govern the amount of nitrogen that exists in tissues in the body. Boyle’s law, volume is equal to one over pressure multiplied by the constant, deals with the pressure and volume relationship.¹ This is most important at the lower pressure end of the diving spectrum because the rates of changes in volume are the greatest then. Henry’s law tells us that the concentration, that is the number of molecules per volume, in a tissue is proportional to the partial