

HyperActivity

The Newsletter of the British Hyperbaric Association

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Vincent Hong – Fiona Sharp – Carl Edmonds
Fred Bove – John Selby – Bob Ramsay

HyperActivity

THE FUTURE OF HYPERBARIC MEDICINE

Let me introduce you to three patients:

Patient No.1 with radiation injuries required weekly blood transfusions despite several endoscopic procedures, but after hyperbaric treatment he is now back to playing bowls, not worrying about his bowels.

Patient No. 2 had a non-healing Diabetic Foot ulcer for 18 months, but it is healed after three months of HBO and he is back at work.

Patient No. 3 is an 88 year old lady who cares for her daughter with cerebral palsy but has become extremely frail with malignant otitis externa which developed into skull base osteomyelitis and multiple nerve paresis. Despite long-term antibiotics and frequent admissions to hospital she was clearly not going to survive. After four months she is discharged home and two months later the daughter moves back to her care.

These three are imaginary patients but very similar to the ones that we treat in our hyperbaric unit and I am sure in several other hyperbaric units in this country and also around the globe. My three examples also required other input, e.g improved foot care and antibiotics in the second and third case but the hyperbaric therapy undoubtedly played a big role. No wonder that the newly elected secretary of state for health on the first day in office, the week before Christmas 2019 requests quotes for hyperbaric chambers in all NHS hospitals.

DON'T STOP READING!

This is not a joke, but it is dream.

One can dream rather than procrastinate in the face of the current nightmare of hyperbaric medicine being squeezed further and further away from patients who desperately need it. One could also imagine that once the hype of the election is passed and the reality of the financial constraints in the NHS sets in, further restrictions may be put in place in a few years' time. I do not think that funding to treat injured divers is necessarily protected from any restrictions in the future.

What can we do about this situation?

We should do what we do best: good clinical care for appropriate patients and then ensure the patient's outcomes are recorded appropriately and added to the international registries that are being set up. There are some reservations about the value of registries because in the past random controlled trials (RCTs) were regarded as the minimum acceptable evidence. The commissioners and public health officials involved with the development of the current commissioning policy supported the idea of registries to ensure one daily elective treatment in every unit to keep the unit geared up for emergencies. They may not be in position or may not continue to support the idea for ever, but we should not look at them for support in the future. Our colleagues in different disciplines who refer cases to us are the best ones to help us fighting the cause of our patients.

In many instances the numbers treated are very small and RCTs will not be feasible but our colleagues in other disciplines are fully aware of the value of registries and most of them participate in registries themselves. We have to make the registries robust and accurate and then communicate with our colleagues and engage in writing 'best practice' guidelines. This will be frustrating at times when co-authors are unconvinced but may be the only way to go ahead. The delay in setting up the Redcap registry has been worthwhile because of the link with a reputable academic department in a well-known University.

Another area where we should focus on is having a recognised university training course in Hyperbaric Medicine. The need for a dedicated hyperbaric medicine course for physicians has been identified for a long time as there is none available in the UK and there are several reasons. One of them being the relatively small numbers in any individual country.

We have the backing of experienced trainers from institutions with excellent reputations in diving medicine training, as well as interest expressed by two universities to host such a course. The uptake in the UK will be small but online courses in other

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Cover Photo: An abandoned Hyperbaric Chamber at Caraway Hospital in Birmingham, AL.

disciplines in the English language has been found to be surprisingly popular in Europe, the Middle East, and even as far as China.

Such a course will consist of several modules covering the assessment and management of the indications approved by ECHM/UHMS as well as Research methodology, basic statistics, basic ultrasound knowledge, Leadership skills, etc.

Recognition of prior learning should be possible.

I do not think for one minute that this is going to be easy to set up but I think we have a small window of opportunity to keep the door open for hyperbaric medicine and we should not squander it.



*Pieter Bothma,
British Hyperbaric Association Chair*

NEWS

Tackling side effects in head and neck cancer treatment – the end of the road for hyperbaric oxygen?

Cancer Research UK – May 02, 2019

Some side effects appear years after cancer treatment. That's the case for one side effect of radiotherapy for head and neck cancer, called osteoradionecrosis.

This painful condition results from damage to the jaw bone, which often doesn't heal properly and can cause bone fractures or even bone death.

It can develop without an obvious trigger, but it's often linked to dental work like tooth extractions or implants. And it can happen even if the dental work is carried out 20 years after radiotherapy.

Professor Richard Shaw, a Cancer Research UK-funded head and neck surgeon at the University of Liverpool, treats the difficult condition quite frequently through reconstructive surgery.

Shaw says that these procedures are often bigger and harder than patients' original cancer surgery, because they've already had so much treatment in that area.

For that reason, researchers have looked for ways to prevent osteoradionecrosis from developing. And that's where hyperbaric oxygen comes in. It started with a small trial in the 80s, which has influenced the way doctors prepare patients for dental surgery ever since.

But new Stand Up To Cancer trial data, led by Shaw and published in the International Journal of Radiation Oncology (Volume: 104(3), pages: 530-539), shows the hyperbaric oxygen hype may have been a bit premature.

The trial of hyperbaric oxygen

Back in the 1980s, a small trial in the US showed that giving hyperbaric oxygen before dental surgery could reduce the risk of osteoradionecrosis developing.

"Prevention is obviously a very good idea, but I think there was concern around whether hyperbaric oxygen was the answer," says Shaw.

A big question that lingered around the treatment was how applicable the 34-year-old trial results were to patient's today. Radiotherapy has become a lot more targeted than it was a few decades ago, which may affect the risk of someone developing osteoradionecrosis.

"There really was no recent, good evidence for hyperbaric oxygen," says Shaw.

Adding to that, hyperbaric oxygen treatment takes time. Patients have to travel to a centre with a specialised chamber every day for 30 days.

And finally, the cost. According to Shaw, the NHS is spending somewhere between £5K and £10K per patient on hyperbaric oxygen treatment.

Expensive, intensive and based on potentially shaky evidence. The feeling was that it was time for hyperbaric oxygen to be put back to the test.

Shaw and his team ran a trial testing hyperbaric oxygen treatment in 144 patients who'd had head and neck cancer and now needed dental surgery. Half the patients had a course of hyperbaric oxygen before surgery, the other half didn't.

Patients were then monitored after dental treatment to see who developed osteoradionecrosis, as well as monitoring pain levels and quality of life.

The first thing the team learnt was that osteoradionecrosis is a lot less common now than it was in the 80s.

"We can now say that with modern radiotherapy, someone's risk of having this jaw problem is about 1 in 20. Which is a lot lower than the previous trial, which had shown it was around 1 in 3," says Shaw.

The other big finding was that hyperbaric oxygen had no impact on the number of people developing osteoradionecrosis – the numbers were pretty much the same in each side of the trial.

And although people who had hyperbaric oxygen reported fewer short-term side effects and less pain immediately after surgery, there was no difference in long-term pain or quality of life between the two groups.

"It's very clear that in our health system, hyperbaric oxygen is no longer justified," says Shaw. "In some ways it could be reported as a negative finding, because hyperbaric oxygen didn't work. But I think it has given us a definitive change of practice."

What's next?

As well as changing practice, the trial leaves another legacy: patient samples. Shaw is planning to use these to understand more about who develops osteoradionecrosis.

"What you'll deduce with 6% of patients developing osteoradionecrosis in this trial is that 94% of people didn't, even though they were considered high risk," he says.

Right now, risk is assessed based on where the radiotherapy was aimed, as well as the type of follow-up dental work that's being done. But Shaw believes risk could be predicted more precisely. The team will now study the patient samples to look if there are any differences in the DNA of patients who went on to develop osteoradionecrosis.

"We're looking for a genetic signal or a 'fingerprint' that identifies people at high risk of osteoradionecrosis that we could validate in future trials," says Shaw.

For now, Shaw says doctors can help to reduce the risk of osteoradionecrosis by making sure patients' teeth are in the best possible condition before and after radiotherapy.

This, Shaw says, could help make sure "these conditions that require surgery don't arise in the first place."

NEWS

Health Canada warns against use of 'soft-shelled' hyperbaric chambers for oxygen therapy

www.ctvnews.ca; October 25, 2019 (edited)

Health Canada is warning Canadians against purchasing or using "soft-shelled" hyperbaric chambers due to concerns that such chambers could pose serious health risks and even lead to death.

According to the warning released by the agency, these chambers are "unauthorized medical devices," and could be dangerous.

Hyperbaric chambers are a legitimate medical treatment -- but so far only in their original, hard-shelled form. A proper hyperbaric chamber is made of steel, and resembles a capsule bed, usually for one person.

Health Canada says that soft-shelled, or inflatable versions of chambers could cause disease through cross-contamination of different users, change a patients' blood sugar levels, or damage ears, eyes, sinuses, lungs and teeth. A soft-shelled chamber could even catch on fire or explode, the release says, "as a result of static discharge within an elevated oxygen environment."

According to Health Canada's page on hyperbaric chambers, the hard-shelled chambers were recognized as an effective treatment for 14 specific conditions by the Undersea and Hyperbaric Medical Society in 2011. Among the conditions or injuries treatable by hyperbaric chambers are carbon monoxide poisoning, anaemia, bone infections, radiation burns from cancer therapy and thermal burns.

Some private companies have claimed that these chambers can be used to treat other medical conditions such as cerebral palsy, autism, AIDS and migraines, but Health Canada notes that these claims have not yet been backed up by scientific proof.

It is illegal in Canada to sell or advertise hyperbaric chambers without a license. Health Canada is asking private companies that sell unauthorized soft-shelled hyperbaric chambers to stop the sales and conduct a recall.

The health agency also wants consumers to check which medical devices have been licensed for sale in Canada on their website before they purchase anything.

NEWS

Oxygen therapy in high demand amid air pollution in Delhi-NCR

Healthworld.com; 06 November 2019



With air quality in Delhi and NCR dipping to alarming levels, health experts are saying that the demand for a new kind of therapy, called Oxygen therapy or Hyperbaric Oxygen Therapy (HBOT), has shot up among a large number of patients with respiratory problems across the city.

In HBOT, people are made to breathe pure oxygen in a pressurized room, allowing oxygen to diffuse more effectively in the blood, which repairs the tissue and restores its normal functions.

"Breathing pure oxygen at a pressure three times higher than the atmospheric pressure allows the lungs to gather more oxygen and send it to all parts of the body through blood. Oxygen-rich blood helps fight infections and triggers stem cells that stimulate and sustain healing," Dr Alok Chopra, Medical Director at Daivam Wellness, told on Tuesday.

He said that HBOT is coming up as an alternative for Delhiites, who cannot spare time to go to a cleaner environment but still want to keep themselves healthy and safe amid the "extreme conditions".

Explaining the benefits of HBOT in high pollution areas Dr Chopra said: "Since HBOT improves immunity and boosts the healing process, it also helps people with compromised immunity to deal with the effects of high pollution. However, it is important to know here that HBOT is a therapeutic procedure and should always be taken under medical supervision and guidance."

HBOT can be a valuable adjunct therapy for a wide range of medical conditions, including allergies, heat stroke, cancer, Parkinson's, depression, asthma, AIDS/HIV, Autism, spinal cord injury, Hepatitis, Alzheimer's, chronic fatigue syndrome, migraine, sports injury, arthritis, brain injury, heart diseases, stroke, multiple sclerosis and diabetic wounds that are not healing properly.

The role of HBOT to counter the health hazards of pollution is a rather new concept. However, since people in Delhi and NCR are breathing in air of extremely poor quality, HBOT appears to be a significant line of treatment for many at this time.

"Carbon monoxide poisoning and decompression sickness are among the most specific conditions where HBOT is almost always suggested. People who spend a lot of time in traffic or near automobile fumes are especially prone to develop such conditions and should consider HBOT as an important preventive measure," Dr Chopra said.

Delhi is already witnessing a 'Public Health Emergency' with hundreds of patients with respiratory problems being shifted to intensive care units (ICUs) by their pulmonologists because the air in the general ward is posing danger to their health.

Dr Vikas Maurya, who is head of pulmonary medicine department at Fortis Hospital, said: "Patients in ICU have shot up by at least three folds. We have admitted a lot of patients in ICU as they are more vulnerable in general ward. People with pre-existing respiratory diseases are at major risk. Children, the elderly, pregnant women are more vulnerable. If this crisis of air pollution continues, ICU beds will fall short very soon. We need solid sustainable management by the government to tackle air pollution. This is a deadly situation."

Three-month-old baby girl is burned alive inside ambulance after oxygen tank explodes in Turkey

Daily Mail; 29 May 2019

A three-month-old baby was burned alive inside an ambulance after an oxygen tank exploded on a motorway in Turkey.

The incident happened in the district of Silivri in the north-western province of Istanbul.

The baby, named as Rojin, was in an incubator next to her mother when an oxygen bottle exploded. The cause of the incident is still unknown.

The baby's mother and ambulance staff were able to escape from the burning vehicle but the baby died inside the vehicle.

Emergency services were called to the scene and firefighters extinguished the fire.

A police investigation is ongoing.

Oxygen in hyperbaric chamber provides relief after radiotherapy

Science Daily; 16 October 2019

Hyperbaric oxygen therapy (HBOT) can relieve self-reported symptoms and side-effects of radiotherapy against cancer in the pelvic region, a study shows. After 30-40 sessions in a hyperbaric chamber, many patients experienced reductions in bleeding, urinary incontinence, and pain alike.

"This treatment is highly effective for the majority of the patients" states Nicklas Oscarsson, first author of the article, a doctoral student in anesthesiology and intensive care at Sahlgrenska Academy, University of Gothenburg, and senior consultant at Angered Hospital.

Radiotherapy is part of many treatment protocols of cancer in organs such as the prostate, cervix, ovaries, and colon. One side-effect of radiotherapy in the lower abdomen is damage of nearby, healthy tissue such as the urinary tract, bladder, vagina, or rectum.

Symptoms such as a frequent urge to urinate, incontinence, bleeding, and severe abdominal pain cause both physical and social difficulties. These may arise several years after radiotherapy and cause chronic and often increasing discomfort. Often, all these patients can be offered is temporary relief of symptoms or mutilating surgery.

In the current study, the first randomized controlled study to compare hyperbaric oxygen with standard care, published in *The Lancet Oncology*, 223 patients were screened, and 79 were included in the analysis. Patients reported relatively severe symptoms and lifestyle limitations, mainly due to reduced urinary bladder capacity, bleeding, incontinence, and pain.

The patients were treated at university hospitals in five Nordic cities: Bergen in Norway, Gothenburg and Stockholm in Sweden, Copenhagen in Denmark and Turku in Finland. 38 patients, the control group, were given standard care, which normally includes medication and physical therapy, while the other 41 were treated with hyperbaric oxygen for 90 min daily, 30-40 times.

During their sessions each of the latter patients, wearing a snug-fitting oxygen mask or hood, sat in a hyperbaric chamber for one or more persons. The pressure of the oxygen, 240 kilopascals (kPa), corresponded to water pressure at a depth of 14 meters.

In the hyperbaric chamber group, two out of three patients felt that they got better, and in some cases, all symptoms vanished. The others, including the control group, experienced no major changes. The specific focus of the study is self-reported qualitative and quantitative symptoms, and the important issue of the quality of life for cancer survivors.

The study is also linked to the discoveries behind the Nobel Prize in Physiology or Medicine 2019, about how cells sense and adapt to oxygen availability. It was already known that hyperbaric oxygen therapy boosts vascular growth, but there has been little exploration of its specific effects.

In the patients in the study, general health was greatly impaired before treatment, sometimes after long periods of discomfort. Thus, if a patient no longer needed morphine for pain or was able to go to the toilet once a night instead of five times, it was a clear improvement.

"It's a great pleasure to hear patients tell us how they feel they're returning to a normal human life. This also applies to those who get better but perhaps aren't entirely well," Oscarsson concludes.

Journal Reference: Nicklas Oscarsson *et al.* Radiation-induced cystitis treated with hyperbaric oxygen therapy (RICH-ART): a randomised, controlled, phase 2–3 trial. *The Lancet Oncology*, 2019. DOI: 10.1016/S1470-2045(19)30494-2

Plane makes emergency landing when scuba diver suffers decompression sickness

CBSlocal.com; 01 July 2019 (edited)

A plane made an emergency landing in Dallas when a scuba diver returning to Denver from his honeymoon in Cancun suffered decompression sickness during the flight. Malik Altoos and his wife Kenda Albaree were on their way home last week when Altoos started feeling sick.

"We were only about 20 minutes into the flight when my hands started tingling. I felt nauseous, dizzy and had trouble breathing," said Altoos, 26. "I told the flight attendant I need oxygen right away."

The newlyweds went on three dives – from 15 feet to 30 feet below the surface. After the plane landed safely in Dallas, Altoos had hyperbaric oxygen therapy at Texas Health Presbyterian Hospital Dallas. Altoos said he waited 19 hours after diving before flying.

VINCENT HONG



Dr. Vincent Hong MB. BCH. BAO., FRCA, FFICM, MBA died tragically in an accident while diving the wreck of the *SS Burdigala* in Greece on Friday 27 September 2019.

The premature death of Vincent has been a shock for the British Hyperbaric Medicine Community, all his colleagues and friends, as well as numerous patients for whom he cared passionately, and most sadly for his beloved family. From the BHA we extend our condolences to Lily, daughter Ellie and the rest of his family. His place will never be filled, but the only consolation for us is the fact that he lived life to the fullest commitment and achieved so much in his shortened life.

He had a successful career as a Consultant Cardio-thoracic Anaesthetist and Intensivist at Hull & East Yorkshire Hospitals NHS Trust as well as Spire Hull & East Riding Hospital and as Hyperbaric Physician at North England Hyperbaric and Medical Services. This gave him an excellent background in physiology and physics to understand the intricacies of rebreather diving and a focus on safety.

Vincent was a very keen diver who preferred to spend as much time underwater as possible. He also was a passionate underwater photographer and marine conservationist. In his spare time, he loved to organise frequent dive trips to various UK and overseas dive locations.

In addition to the BHA he was also a Member of United Kingdom Diving Medical Committee, a Recreational and Technical (CCR) Diving Instructor, and PADI, BSAC, ITDA & PSAI member.

The void he leaves will never be filled. We can only be grateful that his path crossed and lit up ours- rest peacefully dear friend.

Pieter Bothma, BHA Chairman

Tributes paid to Hull doctor Vincent Hong

Hull and East Yorkshire News; 29 October 2019

Tributes have been paid to a "passionate and respected" Hull doctor who tragically died during a deep sea diving trip in Greece.

Dr Vincent Hong, 53, was a consultant cardio-thoracic anaesthetist who worked at both Castle Hill Hospital and Spire Hospital in Anlaby. The much-loved father was also a hyperbaric physician and a keen diver who travelled the world taking underwater photographs.

His tragic death happened during a diving trip off a Greek island on Friday, September 27. Announcing his unexpected death on social media, his wife Lily and daughter Elly said he would forever be in their hearts and died "doing something he loved".

Friends have described Vincent as "someone with a generous heart", a "true gentleman", an "absolute professional" and a "star of a man".

Chris Harrison, hospital director at Spire Hull and East Riding Hospital, said his patients and colleagues miss him terribly.

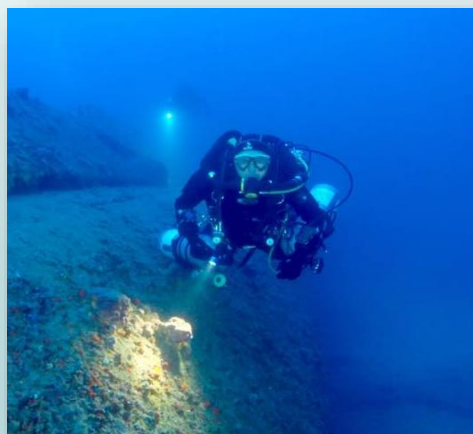
He said: "Vince was a kind, fiercely intelligent and cheerful man, and a very popular member of our consultant body.

"An excellent anaesthetist, a long and loyal supporter of the hospital, and a good friend to many, Vince brought joy to all of those who were lucky enough to work with him, and was a very dear friend to many.

"Vince was much loved by his patients and colleagues and we will miss him terribly. His death is a huge loss to the hospital, and we are all devastated by this great tragedy."

A thanksgiving service has been held at St John Newland Church, Hull, where Vincent was a member for 12 years.

Hull Coroner's Court confirmed an inquest has been opened into his death.



FIONA SHARP



Dr. Fiona Sharp, MBBS, FANZCA died in a diving accident in Bonaire on Thursday 17 October 2019. Fiona was an Associate Member of the BHA and a frequent attendee at BHA meetings.

Fiona was born in May, 1964, in Perth, Australia, and she was bright! She attended Mercedes College Perth, where she was “Dux” in her graduating year. [Dux: from Latin for ‘leader,’ the term that is now used in many countries to indicate the highest-ranking student in a specific achievement].

After leaving high school, Fiona studied medicine at the University of Western Australia where she graduated in 1989 as a Bachelor of Medicine and Bachelor of Surgery (MBBS UWA). After serving an internship in Perth in 1989, followed by a year as a junior Resident in Sydney, Fiona moved to England where she gained her Diploma of Anaesthesia (DA) in 1992, whilst working as a Senior House Officer in Anaesthetics in Southend, Essex.

Fiona then returned to Australia and commenced specialist Anaesthetics training. In 2000, she flew once again to the UK where she spent five years practicing diving medicine at DDRC Healthcare (Diving Diseases and Research) in Plymouth. During this period, she was awarded a Fellow of the Australian and New Zealand College of Anaesthetists (FANZCA) Fellowship in 2004.

At the time of her death, Fiona was working at the Fiona Stanley Hyperbaric Medicine Unit (FSHMHU) in Perth, Western Australia. She had been in post since it opened in November 2014. Prior to that, she was employed at the HMU at Fremantle Hospital from 2007 to November 2014.

Dr Neil Banham, the Medical Director of FSHMHU said: “Fiona loved the diving, the diving medicine, and the camaraderie around the bar. She was regularly first up and last to bed. Most often Fiona could be heard well before she was seen - on land and underwater!! She was well loved by her colleagues at these events and, as many have said, the SPUMS Conference won't be the same without her. I think she attended at least 17.”

Fiona got into diving in her late teens after trying skydiving and scuba diving. Water prevailed and she learned to dive when she was 18 years old. She was a PADI Divemaster, cave certified and qualified to dive the Inspiration, Evolution, SF2, Drager Dolphin, Mark VI Poseidon, and JJ-CCR rebreathers.

Fiona often said she felt the most happy when she was underwater. It was therefore natural that she would take an active interest in diving medicine and she became a fixture at all the major diving medical or tech conferences. SPUMS, UHMS, EUBS, HTNA, as well as EUROTEK, OzTek, Rebreather Forum 3 and other diving industry events.

Fiona was close to her family. She is survived by her mother, three sisters, a brother, and 18 cousins. She was an “oh so very proud” aunt to 13 nieces and nephews.



*Catherine Meehan, SPUMS
Rosemary Lunn, X-Ray Magazine*

*This is a much shortened version of tributes to Fiona.
The full accounts are published at:
<https://gue.com/blog/fiona-sharp-you-will-be-sorely-missed/>
<https://xray-mag.com/content/tributes-are-paid-dr-fiona-sharp>*

CARL EDMONDS



Dr Carl Edmonds, formerly Officer in Charge of the Royal Australian Navy Diving Medical Unit, Foundation President of the South Pacific Underwater Medical Society and Director of the Australian Diving Medical Centre, Sydney, Australia, died on the 1st of November 2019; he was just short of 84.

Among his many achievements, Carl was the lead editor of the series *"Diving and Subaquatic Medicine"*. The fifth edition in the series was published in 2015 and it remains the leading text on diving medicine.

To mark his retirement in 2015, Carl wrote the following in the journal *Diving and Hyperbaric Medicine* (2016 Mar;46(1):59):

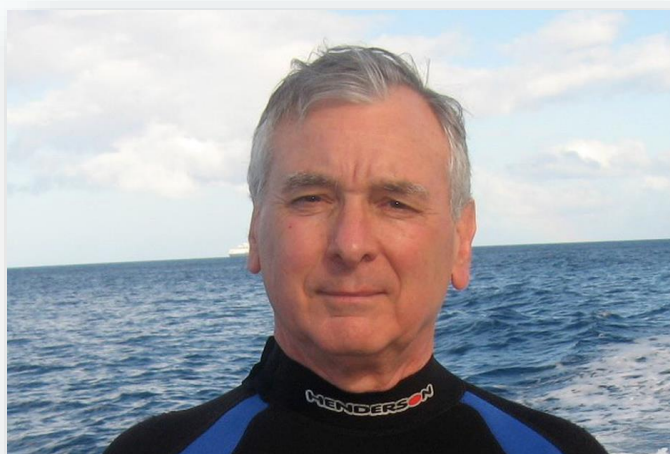
"I would like to take this opportunity to thank all my diving medical colleagues, and my fellow divers, for their generous help and comradeship over the last 50 years. I have now retired from active medical practice in this my octogenarian year and with diminishing vision and slower synapsing of the little grey cells. Snorkelling is now my thing. I have donated my library (i.e., my research resource) to the Hyperbaric Unit in Hobart, and also no longer have secretarial access.

All I have to offer now are anecdotes and experience - a euphemism for remembered mistakes! - and then only over a glass or two of wine. My previous overviews of diving medicine, international, Australasian and personal, were described in the SPUMS Journal. Most of my research, reviews and lectures were also reported there and my admiration

abounds for this publication (now *Diving and Hyperbaric Medicine*) and its editors. 2015 was my swan song. I updated our free internet text, *Diving Medicine for Scuba Divers*, on the www.divingmedicine.info site. There is no copyright, so please use it as you wish. Informative chapters can be downloaded for specific patients.

With the assistance of Mike Bennett, John Lippmann and Simon Mitchell, we published the fifth edition of *Diving and Subaquatic Medicine* - a best seller for 40 years! My greatest satisfaction of 2015 came as we finally comprehended the conundrum of scuba divers, pulmonary oedema (SDPE), after more than a decade of analysing detailed case histories, investigations and experiments. I agree with Charles Dent and Oliver Sacks - our patients teach us more than our surveys and statistics. Thank you all."

FRED BOVE



Dr. Alfred "Fred" Bove, an accomplished cardiologist and avid diver who also researched medical treatment for divers, died on Thursday 17th of October, from complications of glioblastoma; he was 81.

Fred was the lead author of the series *"Bove and Davis' Diving Medicine"*. The series gained a worldwide reputation as a reliable reference on diving safety and the management of diving-related health conditions. The 4th edition was published in 2003.

Dr. Bove, a South Philadelphia native who grew up in a working-class Upper Darby family, spent more than 50 years as a cardiologist and professor, working at Temple University Hospital and School of Medicine, and the Mayo Clinic.

A Navy reservist who retired with the rank of captain, Dr. Bove oversaw a military hospital in Saudi Arabia during Operation Desert Storm.

Fred Bove ...

After graduating from Temple with a medical degree, Dr. Bove earned a Ph.D. in physiology there. In 1971, he joined the Navy and became an undersea medical officer, a mission that sparked a lifelong passion for scuba diving and underwater physiology. Dr. Bove went on to research medicine and treatment for divers, co-authoring a definitive textbook on the subject.

Dr. Bove published more than 200 research papers and authored texts on topics including coronary disease and exercise medicine, according to his family and colleagues. He served as president of the American College of Cardiology from 2010 to 2011.

Dr. Bove was diagnosed with glioblastoma in December 2015 after noticing his own symptoms of a brain tumour. He continued working until 2017. Dr. Bove is survived by his wife, daughter and son, two sisters and a brother.

JOHN SELBY



John Selby, designer and manufacturer of the portable 'Hyperlite' recompression chamber, has died from heart failure at the age of 81.

The son of European refugees who arrived in the UK before the second World War, John obtained a degree in Mechanical Engineering from the University of London.

He became a commercial pilot and set up his own air taxi company "Direct Air". He took up sports diving joining the London Branch of the British Sub-Aqua Club. There he met his wife, Jane, who was already an experienced diver. Together they joined 'SOS UK Ltd.', a small company importing Italian diving equipment, and then set up a new company to focus on the development of a new lightweight hyperbaric chamber which he had designed.

By 1989 they had perfected the 'Hyperlite', a portable, non-metallic chamber capable of transferring an injured diver or submariner to the nearest conventional chamber while still under pressure. John's invention was accepted by Lloyds and eventually by the American Society of Mechanical Engineers safety committee. The Hyperlite became widely recognised in the industry and was supplied to the world's Navies in addition to many recreational and commercial diving centres.

John is survived by his wife and two children; his son, Paul, has now taken over the business.

BOB RAMSAY



Bob Ramsay, past Director of Operations and Hyperbaric Design for Hyperbaric Health, has died.

Bob started diving in 1966 and became a mixed gas and saturation diver in the North Sea. Bob was a diver on the dive that contributed to the first North Sea oil to come ashore (Argyll Field, 5 July 1974).

Bob moved to Australia in 1978 and continued commercial diving. He also became a PADI Open Water Scuba Instructor and he set up the first ever PADI 5-star facility outside of USA and Canada.

Bob designed and commissioned South Australia's first purpose-built recompression chamber for the Royal Adelaide Hospital, and he moved to the RAH as a hyperbaric technician in 1988.

Bob joined Hyperbaric Health in 2000 and went on to build the world's largest network of hyperbaric chambers, constructing over 40 systems.

Bob was a founding member of DAN Asia-Pacific, the Hyperbaric Technicians and Nurses Association (HTNA) and the Asian Hyperbaric and Diving Medical Association (AHDMA).

RECENTLY PUBLISHED RESEARCH (1)

These are recently published papers that may be of interest to the general BHA membership. The list now includes research published in the Undersea and Hyperbaric Medicine journal and Diving and Hyperbaric Medicine. Listing here is based on web-based searches only; quality is not inferred!!

HYPERBARIC MEDICINE

Emerging indications for hyperbaric oxygen. By: Bennett, Michael H; Mitchell, Simon J. CURRENT OPINION IN ANAESTHESIOLOGY Volume: 32 Issue: 6 Pages: 792-798 Published: 2019-Dec

Effects of exposure to mild hyperbaric oxygen during unloading on muscle properties in rats. By: Ishihara, Akihiko. JOURNAL OF MUSCLE RESEARCH AND CELL MOTILITY Volume: 40 Issue: 3-4 Pages: 365-372 Published: 2019-Dec (Epub 2019 Jul 01)

HBO Promotes the Differentiation of Neural Stem Cells via Interactions Between the Wnt3/beta-Catenin and BMP2 Signaling Pathways. By: Chen, Chongfeng; Yang, Yujia; Yao, Yue. CELL TRANSPLANTATION Pages: 963689719883578 Published: 2019-Nov-06 (Epub 2019 Nov 06)

Clinical and morphological effects of hyperbaric oxygen therapy in patients with interstitial cystitis associated with fibromyalgia. By: Bosco, Gerardo; Ostardo, Edoardo; Rizzato, Alex; et al. BMC UROLOGY Volume: 19 Issue: 1 Pages: 108 Published: 2019 Nov 05

The need for differentiation between ischaemic and non-ischaemic diabetic foot ulcers when treating with hyperbaric oxygen therapy. By: Brouwer, R J; Lalieu, R C; Hoencamp, R; et al. DIABETIC MEDICINE doi: 10.1111/dme.14169 Published: 2019-Nov-05 (Epub 2019 Nov 05)

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DIVING & ALTITUDE MEDICINE

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Hyperbaric and diving medicine meetings and conferences in 2020

Second Baltic International Symposium on Diving & Hyperbaric Medicine

4-6 June 2020

Gdynia, Poland

This symposium is dedicated to exchanging knowledge between scientists and clinical practitioners on both Diving & Hyperbaric Medicine. Lectures in this Symposium will be by invitation only, and speakers are cherry-picked to verify that they bring the latest science and medical perspective to the forum. There are also two satellite Masterclasses planned: one on Advanced Diving Medicine and the other one on Complications in HBOT.

For those who are interested, there will be a possibility to participate in the Fire Drills inside the hyperbaric chamber, to get wet under pressure!

Visit the Symposium website at <http://www.BISDHM.events>, check the programme and register now to get early registration discount and to reserve your place in the chosen Masterclass and fire-fighting exercises.

ICHM 2020

11 - 15 November 2020

Rio de Janeiro, Brazil

The 20th International Congress on Hyperbaric Medicine (ICHM), which will take place at the Rio Othon Palace Hotel, in Copacabana, in the city of Rio de Janeiro.

This event is held every 3 years, having started in 1963 in the Netherlands, and is not linked to any institution, only to the professional hyperbaric physicians organizing the event.

The event will feature renowned national and international speakers, who will enrich the congress's scientific programme by sharing their expertise in Hyperbaric Medicine with participants.

Website: <https://eventegg.com/ichm/>

Hyperbaric and diving medicine meetings and conferences in 2020

SPUMS 2020

19–24 April, 2020

Oceans Resort, Tutukaka, New Zealand



Theme: Diving Medical Support - Off the Beaten Track

Guest Speaker: Dr Richard Harris

Dr Richard “Harry” Harris works in anaesthesia in Adelaide, South Australia. He has expertise in aeromedical, diving, wilderness and remote area medicine. His passion for cave diving goes back to the 1980’s and has taken him to the corners of the globe in search of new adventures. Harry has a professional and voluntary interest in search and rescue operations, establishing the first sump rescue training course in Australasia. By building relationships with emergency services in Australia he has been preparing for such an event. The 2018 Thailand Cave Rescue was an opportunity to put this training to work.

Other speakers include: Associate Professor David Doolette and Professor Simon Mitchell

Website: www.spums2020.nz



UHMS 2020

18-20 June, 2020 (pre-courses 17 June)

Sheraton San Diego Hotel & Marina, San Diego



The UHMS Annual Scientific Meeting consists of abstract and poster presentations, plenary sessions, the annual Kindwall and Lambertsen Lectures, and other social events. There will be exhibits from a number of hyperbaric, diving and wound care vendors. The Annual Meeting also affords an opportunity for participants to meet and interact with past and present leaders of the Society and to become active in Society affairs.

Website: www.uhms.org

EUBS 2020

16-19 September 2020

Prague, Czech Republic

Prague is charming city with rich history, which has been a political, cultural and economic centre of central Europe. Due to its location has a direct air links with most European capitals and direct air connection from Frankfurt a. Main, Germany, for connecting to overseas flights to other continents. Although hyperbaric medicine has a long tradition, in 2020 we will celebrate the 55th anniversary of the establishment of this medical field in this country, the conference will be held for the first time in the Czech Republic and a second time in the countries of the former so-called Eastern Bloc. The conference will focus on the research, physiological as well as medical aspects of hyperbaric and diving medicine and evidence based medicine. You can also be sure that we are preparing an interesting and exciting social programme.

Website: www.eubs2020.com

BHA Member Chambers*

Aberdeen

Aberdeen Royal Infirmary, Foresterhill,
Aberdeen AB25 2ZN
Daytime & Emergency Telephone: 0345 408 6008
Clinical Lead NHS Grampian Hyperbaric Service: Dr Ruth
Stephenson
Email: ruth.stephenson@nhs.net
Web Site: www.hyperchamber.com

Cardiff

DDRC South Wales, Spire Cardiff Hospital, Croescadarn Road,
Pentwyn, Cardiff, CF23 8XL
Principal Medical Director: Non-emergency facility. Daytime
telephone: 01752 209999

Chichester

Hyperbaric Medicine Unit, St Richard's Hospital,
Spitalfield Lane, Chichester, West Sussex PO19 6SE
Daytime Telephone: 01243 788122 Ext 2504
Principal Medical Director: Dr Mark Glover.
Email: mark@mmmgllover.onmicrosoft.com

Great Yarmouth

East of England Hyperbaric Unit, Lowestoft Road,
Gorleston, Great Yarmouth, Norfolk NR31 6LA
Daytime Telephone: 01493 452452
Emergency Telephone: 01493 452452
Principal Medical Director: Dr Pieter Bothma.
Email: pabothma@nhs.net; pabothma@gmail.com

Hull

North of England Medical Hyperbaric Unit,
SPIRE Hospital, Lowfield Road, Anlaby, Hull HU10 7AZ
Principal Medical Director: Bruce Mathew
Daytime Telephone: 01482 659471
Emergency Telephone: 01482 659471

London (Whipps Cross)

London Hyperbaric Medicine, Whipps Cross University Hospital
NHS Trust, Leytonstone, London E11 1NR
Principal Medical Director: Dr Pieter Bothma
Daytime Telephone: 020 8539 1222
Emergency Telephone: 07999 292999
Email: mail@londonhyperbaric.com
Web Site: www.londonhyperbaric.com

Midlands Diving Chamber

Redwood House, Hospital of St Cross, Barby Road,
Rugby, Warwickshire, CV22 5PX
Principal Medical Director: Dr Michael Gonevski
Daytime Telephone: 01788 579555
Emergency Telephone: 07940 353816
Email: doctor@midlandsdivingchamber.co.uk
Web Site: www.midlandsdivingchamber.co.uk

Oban

West Scotland Centre for Diving and Hyperbaric Medicine
Tritonia Scientific Ltd., Dunbeg,
Oban, Argyll PA37 1QA
Principal Medical Director: Dr C.M. Wilson
Daytime Telephone: 01631 559211
Emergency Telephone: 0345 408 6008
Email: colinwilson@tiscali.co.uk or
martin.sayer@tirtoniascientific.co.uk

Orkney

Orkney Hyperbaric Unit
Old Academy Back Road, Stromness
Orkney KW16 3AW
Principal Medical Director: Dr A Trevett
Daytime Telephone: NHS Orkney 01856 888000
Emergency Telephone: Coastguard 999 or 0345 408 6008
Email: andrew.trevett@nhs.net

Plymouth

DDRC Healthcare, Plymouth Science Park, Plymouth,
Devon PL6 8BU
Principal Medical Director: Dr Clair Ashford
Daytime Telephone: 01752 209999
Emergency Telephone: 08702 385001
Email: info@ddrc.org
Web Site: www.ddrc.org

Wirral

N W Emergency Recompression Unit, Murrayfield Hospital,
Holmwood Drive, Thingwall Wirral CH611AU
Principal Medical Director: Dr Tristan Cope
Daytime Telephone: 0151 648 8000
Emergency Telephone: 0151 648 8000
Email: tristan.cope@hyperbaric-medicine.co.uk
Web Site: www.hyperbaric-medicine.co.uk



www.hyperbaric.org.uk

*Accurate as of October 2019