

European Journal of Underwater and Hyperbaric Medicine



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ECHM European Committee for Hyperbaric Medicine
SPUMS South Pacific Underwater Medicine Society
UHMS Undersea and Hyperbaric Medical Society

MANUSCRIPTS: see INSTRUCTIONS TO AUTHORS on inside of back cover.

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EDITOR'S COLUMN

Dear Readers!

The last issue of the Journal has been full with information about meetings and courses in Diving and Hyperbaric Medicine. This clearly demonstrates the importance of such a journal as the *Europ J Underw & Hyperb Med* for the continuing education of physicians and research scientists. It also serves as a forum for information on the diverse activities of our members in this relation.

As a reader of this journal you probably don't need to attend an Introductory Course in Diving Medicine. But if you know a colleague who wants to, then tell them that a course which complies with the training objectives of the European Diving Technology Committee is being planned for Thursday 7th to Sunday 10th March 2002 by David Elliott and Nick McIver in conjunction with Gerard Laden of the North East Hyperbaric Medicine unit in Hull. Easy to get to (nearest airport Humberside and plenty of ferries across the North Sea). Details from Karen@Biomedseminars.demon.co.uk or fax (+44) 208 786 7036.

This issue is dedicated to the Annual Scientific Meeting of the EUBS with the whole edition containing the Programme and Abstracts of the meeting in Hamburg. This way the pre-requisite to have the meetings abstracts available to all members of the Society in the EUBS Newsletter is achieved in a timely fashion.

The meeting itself and all the social events have been organised by Dr. Uli van Laak with all the verve and effectiveness a Senior Navy Officer can devote to the position of Secretary General of such a meeting. It has been a compliment for me to be asked for support and a great pleasure to assist him in this difficult task on the organising committee.

All the best for a successful conference and an enjoyable stay in Hamburg to all of you,

Peter

ERRATUM

As the Editor of the *European Journal of Underwater and Hyperbaric Medicine* I regret that an error passed unnoticed in the article "**Tissue Oxygen Levels During Hyperbaric Oxygen Breathing**" by **Dr. Valerie Flook** which was published in the **June 2001** issue. Figures 4 and 5 were exchanged mistakenly while the legends of the figures are displayed accordingly to the text. **Peter**

MESSAGE FROM THE PRESIDENT OF THE EUBS

Dear friends!

We are in the middle of summer and most of us are either enjoying a well earned vacation, just come back from one or on the way to one.

This is also conference time and many of the conferences we need or want to attend are held in summer. Our 2001 EUBS conference is also a summer event and I hope many of you have marked it down as one of the conferences you want AND need to attend.

This conference is, for many of us, the only opportunity we have to discuss hyperbaric and diving medicine with a good number of practitioners and experts in the field. Many of the papers presented will contain innovative ideas and although the papers themselves will be available as proceedings, the discussions and comments arising from each paper are not. Not being there means losing the possibility of hearing and even participating in the discussions that follow each presentation.

Our society has been in existence for many years, its main activity, sometimes only activity has been the annual conference, and now our journal, which must change from being only a news sheet announcing conferences, meetings and courses to a forum of discussion on the subject of Baromedicine.

The medical climate in Europe is changing, Medicine is becoming more evidence based, demanding that there is hard evidence to justify each therapeutic and preventive action. Also Governments are no longer willing to cover the costs of all forms of treatment required by their citizens, this is forced on them by the demographic time bomb with an increasingly ageing population, continually rising costs of quality medical care and the raised expectations of the citizen who demands individualized and state of the art medical care from the country's health system.

This means that treatment modalities such as HBO which, unfortunately, is being considered by many uninformed but influential persons as a non-essential mode of treatment, are finding difficulties obtaining the funding and the support necessary to survive. This year's conference host country, is a case in point with the now well known restrictions and limitations placed on state and

insurance payment cover for HBO even in cases of Decompression Illness.

Such restrictions have made many of our German colleagues unable to attend our conference through lack of funds even though it is being held in their own country.

There is the need for the baromedical community to become much more proactive and aggressive in the drive to establish HBO as a universally accepted treatment modality for specific indications, we can no longer remain passive to what is going on around us. A good start would be to participate more in the activities of this Society. This year there was only one nomination for Member at Large. Surely in a Society with 400+ members there are individuals who want to contribute actively to the Society. I hope that during this conference a number of you will approach me or other members of the Executive Committee and offer more than your moral support.

Some of you may have received through the internet information on a number of new international hyperbaric societies. I cannot understand the need to keep re-inventing the wheel. What the hyperbaric community needs is a few strong organizations not a number of weak ones dispersing the strength and efforts of the few existing active individuals.

In Europe, the EUBS should be the scientific society and association and should work in collaboration with the various national societies to form a united front. Strength comes from unity and not individualism. Our society should work closely with two other bodies that do not compete but are complementary to it. The ECHM (European Committee on Hyperbaric Medicine) carries out an important function in creating internationally acceptable standards on all the relevant sections of Baromedicine, such as indications, treatment modalities, qualifications and training. The newly formed ECB (European College of Baromedicine) aims to provide and promote training and education opportunities in Baromedicine as well as act as a central registration and certification body for qualified persons working in the field.

These three organizations are not in competition with each other, in fact they carry completely different functions and together fill all the "gaps" in Baromedicine. I promise that I and my committee will make strong efforts in the coming year to work closely with our sister

organizations to prepare ourselves for the changing European medical climate and ensure the survival of Baromedicine as an approved and accepted speciality in medicine.

Iro Cali-Corleo
President EUBS

MESSAGE FROM THE SECRETARY GENERAL

Dear Members of the EUBS!
Dear Participants of the EUBS 2001 Scientific Meeting!
Dear Friends!

Fortunate to participate in a good number of outstanding EUBS Annual Scientific Meetings of the last two decades I have agreed unhesitatingly on taking over the responsibilities of the Secretary General of the EUBS year 2001 event in Hamburg.

The 27th Annual Scientific Meeting of EUBS is our society's 30th anniversary as well. We have dedicated the Hamburg meeting to the founders and scientists who used to be engaged in the different committees of EUBS over the three decades. At this time I would like to particular welcome those attending who belong to this founder and promoting group. Dr. Robert C. Bornmann, founding member of 1971, has come over from the States in order to serve as the Honorary Chairman of the meeting.

There is no doubt that the scientific program accompanied by the satellite workshops provides us all with an outstanding forum for discussion of new advances and concepts. However, sharing of information about positive developments and success means only one side of the medal. Unpleasant trends must be especially focussed and these lessons learnt have to be exchanged as well.

The EUBS 2001 meeting is now coincident in my time as the current President of the German Society for Diving and Hyperbaric Medicine and a severe crisis of HBOT acceptance here in Germany. The discussion about the origin of the crisis reflect some differences of opinion, however, one point is quite clear. There is a risk for other European countries that economy measures may affect them according to the same pattern.

Writing this 4 weeks before the meeting will start I can only summarise – much to my regret – that the number of registered participants is currently disappointing. This will likely turn into better due to the late booking participants but has already heavily affected our initial design. Appropriate measures had to be taken in order to prevent penalties for breach of contracts. Hard enough for the organising people another aspect may be more worrying. It is obvious that the more HBOT orientated EUBS members have reacted with restraint for what reason ever. I am not quite sure, however, if there was a certain tendency for separate ways, meetings included, this would mean no good at all. Let's hope the best.

Beside the typical frown of a concerned Secretary General: I am delighted to welcome you all who found the way to Hamburg, a beautiful, historical and attractive city, for participation in our 30 years of EUBS anniversary Annual Scientific Meeting. We thank the different speakers and presenters for providing their time and energy and sharing their expertise with us. Special thanks is due the invited lecturers who have agreed unanimously to take over on short notice. Last but not least Congress Partner, namely Matthias Spacke, did a great job in supporting the Secretary General with his expertise and experience.

Enjoy your EUBS 2001 in Hamburg!

Yours Ulrich van Laak
Secretary General, EUBS Meeting 2001

REMINDER

All members who have not yet paid their membership dues for this year are reminded to do so instantly. The Society needs the funds to finance her responsibilities!

You are also reminded to report any changes in your address to the Membership Secretary and to the Newsletter Editor. Otherwise we can not guarantee that the Journal and the correspondence from the Society's secretariat do reach you in time.

Thank you very much for your co-operation!

EUBS Annual Scientific Meeting Hamburg 2001 Pre-Congress Satellite Symposium

3rd HAMBURG SYMPOSIUM ON OCCUPATIONAL RISKS IN HYPERBARIC TUNNELING AND COMMERCIAL DIVING

**Wednesday, September 12, 2001, 8.00 a.m. – 5.30 p.m.,
Bernhard-Nocht-Institut fuer Tropenmedizin, Hamburg**

08.00 – 09.00 Registration

09.00 – 09.20 Opening Ceremony

Dr. W. Thiele, Head of the Occupational Health and Safety Authority, Hamburg

Prof. Dr. Scholbeck, Leiter Prävention, Tiefbau-Berufsgenossenschaft

Morning Session **Chairpersons:** *D. Lamont*, Health and Safety Executive

Dr. B. Neubauer, Staatlicher Gewerbearzt

09.25 – 09.55 Tunnel boring in kerosene contaminated soil

Jean Claude Le Péchon; JCLP Hyperbarie, Paris

09.55 – 10.25 Breathing gas contamination by volatile hydrocarbons

Dr. Valerie Flook; University Aberdeen; Unimed Scientific Ltd. Scotland

10.25 – 10.40 Discussion of both presentations concerning hydrocarbones

10.40 – 10.55 Coffee Break

10.55 – 11.25 Welding fumes in hyperbaric environments

Dr. Szelagowski, GKSS Forschungszentrum, Geesthacht

11.25 – 11.45 Discussion of problems related to welding in hyperbaric environments

11.50 – 12.05 Mercury intoxication, Vienna subway construction

Prof. Dr. Zeithofer, Universitätsklinik für Neurologie, Wien

12.05 – 12.20 Mercury quantification in hyperbaric tunneling

Dipl. Ing. D. Otti; Österreichische Staubbekämpfungsstelle, Leoben

12.20 – 12.35 Discussion of both presentations concerning mercury intoxication

12.35 – 13.35 Lunch Break

Afternoon Session **Chairpersons:** *Dr. W. Förster*, Tiefbau-Berufsgenossenschaft;

N.N.

13.35 – 14.15 Aspects of fire in compressed air tunnels

Donald R. Lamont; Health and Safety Executive, Bootle / Great Britain

14.20 – 15.00 Mineral dust in hyperbaric tunnelling

Prof. Dr. Dr. Kessel; Institut f. Arbeitsmedizin, Med. Universität zu Lübeck

15.00 – 15.15 Coffee Break

15.15 – 15.55 Underwater acoustics

Marie E. Knafelc; M.D., Ph.D., Navy Experimental Diving Unit, Panama City, USA

16.00 – 16.40 Commercial diving in chemical / biological contaminated waters

W. Förster; Tiefbau-Berufsgenossenschaft, Munich

16.45 – 17.25 Remote control underwater vehicles

W. Hornfeld; STN ATLAS Elektronik GmbH, Bremen;

Prof. Dr. J. Wernstedt; Technische Universität Ilmenau

17.30 Closing Ceremony



EUBS Annual Scientific Meeting Hamburg 2001 Pre-Congress Satellite Symposium

SELECTED TRAVEL MEDICINE PROBLEMS IN RECREATIONAL DIVING

**Wednesday, September 12, 2001, 8.30 a.m. – 5 p.m.,
Hotel Inter Continental Hamburg**

(Open for all Registered Participants of the EUBS 2001 Annual Scientific Meeting)

Full Day Scientific Programme:

08:30 Introduction, Risks of Diving Abroad van Laak

Malaria

08:45 – 09:30 Epidemiology – Clinical Presentation – Treatment Regimes Wegner
09:30 – 10:00 Diagnosis – Rapid Tests Erkens
09:45 – 10:15 Prophylaxis Update: Exposition, Chemo Boeken
10:15 – 10:30 Lariam® Prophylaxis in Recreational Diving
– Recommendations of GTÜM van Laak

10:30 – 14:45 Discussion

10:45 – 11:00 Coffee Break

Traveller's Diarrhea

11:00 – 11:30 Clinical Presentation – Differential Diagnosis Langfeld
11:30 – 12:00 Risk Factors and Prevention Langfeld

12:00 – 12:15 Discussion

12:15 – 13:30 Lunch

Outbreak Investigation

13:30 – 14:15 Outbreaks – Introduction to Investigation Principles Wegner

14:15 – 14:30 Discussion

Shistosomiasis

14:30 – 15:00 Biology, Epidemiology Erkens
15:00 – 15:30 Clinical Presentation – Treatment, Prevention Erkens

15:30 – 15:45 Discussion

Vaccination Requirements

15:45 – 16:15 Update of Vaccination – Mandatory Prophylaxis or Nice to Have? Boecken

16:15 – 16:30 Discussion

16:30 Closing Remarks van Laak

**EUBS Annual Scientific Meeting Hamburg 2001
Congress Satellite Symposium**

**2ND INTERNATIONAL “ARTHUR-BORNSTEIN-WORKSHOP” ON COMPRESSED
AIR WORK AND DEEP DIVING IN TUNNEL CONSTRUCTION**

Thursday, Sep. 13th, 2001, 10 a.m. to 6 p.m.

Hotel Inter Continental Hamburg

(Open for Registered Participants)

Full Day Scientific Programme:

Morning Session: European Experience

Chair: T. Low, J. Wenzel

Dutch Labour Legislation with the Focus
on Diving and Caisson Work

T. v. Rees-Vellinga

Dutch Experience in Deep Compressed Air Work

W. Sterk

Compressed Air Work in the U.K. –
Past, Present and Future

A.P. Colvin

The Use of Oxygen on Decompression
on the Blackpool Tables – Theoretical Evaluations and Trials

V. Flook

Swiss Medical Regulations and Practice in
Underwater Tunnelling

J. Wendling

Compressed Air Work in Austria

C. Mader

Compressed Air Work in Sweden

H. Örnhausen

Discussion

Afternoon Session: German Experience

Chair: V. Flook, H. Örnhausen

Deep Compressed Air Work –
Strategies for Decompression Efficiency

J. Wenzel

Training for Advanced First Aid under Pressure

T. Low

Emergency Procedures and Planning

R. Paschen

Medical Results of three Recent Projects
between 4 and 6 bar abs.

K.-P. Faesecke

Discussion

On Friday, Sep. 14th, a free full-day excursion to the construction - site of the “Wesertunnel”
will be offered to all participants.

Return in-time for evening reception is guaranteed!

EUBS ANNUAL SCIENTIFIC MEETING HAMBURG 2001**Hotel Inter Continental Hamburg, Germany****Scientific Programme
THURSDAY, SEPTEMBER 13, 2001****08:30 WELCOME ADDRESSES****Ramiro Cali-Corleo** President EUBS**Ulrich van Laak** President German Society for Diving & Hyperbaric Medicine**08:45 WELCOME LECTURE EUBS 30th ANNIVERSARY****EUBS: 30 YEARS OF PROGRESS AND GROWTH****Robert C. Bornmann** Founding Member of EUBS 1971 and
Honorary Chairman EUBS 2001**Leon J. Greenbaum, Jr.** UHMS Executive Director 1986 - 2000**09:15 INVITED LECTURE**

ILLUSTRATED HISTORY OF HYPERBARIC CHAMBERS

Gerhard Haux**HAUX Life Support, Karlsbad-Ittersbach, Germany****10:00 – 10:30 COFFEE BREAK****(10:00 – 18:00 2nd International “Arthur-Bornstein-Workshop” on Compressed Air Work
and Deep Diving in Tunnel Construction (for invited Workshop Participants))****10:30 – 12:00 SESSION A****DIVING PHYSIOLOGY I**Chairpersons: **Greta Bolstad, Norway**
Jürgen Wenzel, Germany10:30 A01 METHOD FOR QUANTIFYING MECHANICAL ENDOTHELIAL DAMAGE
Vibeke Nossun, A. O. Brubakk (Norway)10:45 A02 EXTRACELLULAR DEHYDRATION INDUCES FUNCTIONAL MOTOR SPINAL DEFICIT
AFTER SEVERE DECOMPRESSION IN THE RABBIT
J.-L. Méliet, Philippe Léni †, J.-P. Menu, F. Laforest, B. Zouani (France)11:00 A04 AEROBIC ENDURANCE TRAINING REDUCE BUBBLE FORMATION AND INCREASE
SURVIVAL IN RATS EXPOSED TO HYPERBARIC PRESSURE
Ulrik Wisløff, A.O. Brubakk (Norway)11:15 A05 EFFECT OF SINGLE DRY AND WET DIVES TO 50 METERS IN SPORT DIVERS ON
ERYTHROPOIETIN (EPO) PLASMA CONCENTRATIONS
**Till S. Mutzbauer, A. Gruenes, B. Neubauer, I. Lorenz, M. Weiss, M. Schneider,
K. Tetzlaff (Germany)**

11:30 A06 NO EVIDENCE OF PERSISTING EXPIRATORY FLOW LIMITATION IN DIVERS AFTER REPEATED OXYGEN REBREATHING DIVING
Till S. Mutzbauer, B. Neubauer, K. Tetzlaff (Germany)

11:45 A08 UNDERWATER ACOUSTICS AND NEUROLOGICAL DECOMPRESSION ILLNESS: NEUROPHYSIOLOGICAL EVALUATION IN A RAT MODEL.
Avi Shupak, D. Tal, Y. Arieli, H. Pratt (Israel)

12:00 – 14:00 BREAK FOR LUNCH

12:30 – 14:00 EUBS EXECUTIVE COMMITTEE MEETING BUSINESS LUNCH

14:00 – 15:15 SESSION B

DIVING PHYSIOLOGY II

Chairpersons: **Alessandro Marroni, Italy**
Wilhelm Welslau, Germany

14:00 KEYNOTE LECTURE

BEYOND THE ABYSS: PHYSIOLOGICAL RESTRICTIONS TO VERY DEEP OPERATIONAL DIVING
Jürgen Wenzel
DLR-Institute of Aerospace Medicine, Linder Höhe, Cologne, Germany

14:30 A09 SUBMARINE ESCAPE FROM 25 ATA USING HYPEROXIC ESCAPE GAS
Michael Gennser, S. L. Blogg, G. A. M. Loveman, F. M. Seddon, J. C. Thacker, M. G. White (Sweden)

14:45 A10 INFLUENCE OF RADICAL SCAVENGER VITAMINS ON ERYTHROPOIETIN (EPO) PLASMA CONCENTRATIONS IN TRAINED SUBJECTS AFTER OXYGEN DIVING
Till S. Mutzbauer, A. Gruenes, B. Neubauer, I. Lorenz, M. Weiss, M. Schneider (Germany)

15:00 A11 REALISATION OF A DOPPLER ULTRASOUND DEVICE FOR UNDERWATER ASSESSMENT OF BLOOD FLOW AND DETECTION OF BUBBLE FORMATION
Raschid Schabana, S. Hamich, P. Radermacher, C-M. Muth, K. Paulat (Germany)

15:15 – 17:15 SESSION C

HYPERBARIC OXYGEN THERAPY - PHYSIOLOGY

Chairpersons: **Jordi Desola, Spain**
Hendrik Liedtke, Germany

15:15 A12 EFFECT OF HYPERBARIC OXYGEN (HBO) THERAPY ON NEUTROPHIL ACCUMULATION AND AREA OF ISCHEMIC TISSUE DAMAGE DURING PERMANENT CEREBRAL ISCHEMIA IN RATS
Astrid Hjelde, M. Hjelstuen, O. Haraldseth, S.R. Thom, A. O. Brubakk (Norway)

15:30 A13 ALTERATIONS OF ARTERIAL BLOOD GASES AFTER HYPERBARIC OXYGEN THERAPY IN CRITICALLY ILL PATIENTS
Beatrice Ratenhofer-Komenda, A. Offner, S. Gabor, H. Klemen, F. Quehenberger, P. Spornbauer, J. H. Fadaei, U. Romirer, G. Prause, F.-M. Schmolle-Jüttner (Austria)

15:45 A14 EXTRACELLULAR SUPEROXIDE DISMUTASE CONTRIBUTES TO INCREASED CEREBRAL BLOOD FLOW AFTER HYPERBARIC OXYGEN
Ivan T. Demchenko, T. D. Oury, J. D. Crapo, C. A. Piantadosi (USA)

16:00 – 16:30 COFFEE BREAK

- 16:30 A15 THE ROLE OF NEURONAL AND ENDOTHELIAL NITRIC OXIDE IN HYPEROXIC CEREBRAL VASOCONSTRICTION
Dmitij N. Atochin, I. T. Demchenko, J. Astern, A. E. Boso, C. A. Piantadosi, P. L. Huang (USA)
- 16:45 A16 HYPERBARIC OXYGENATION AND SPONTANEOUS ELECTRICAL ACTIVITY OF MONKEY BRAIN
Nicola Dekleva (Yugoslavia)
- 17:00 A17 MONITORING OF BRAIN ENERGETIC METABOLISM UNDER NORMOBARIC NARCOSIS, COMPARISON BETWEEN UNIQUE AND MULTIPLE EXPOSURES: A MULTI-PROBE MICRODIALYSIS STUDY IN FREE-MOVING RAT
Aur lie Moulins, F. Escalettes, J. Reybaud, J.-L. M liet, J.-J. Risso (France)
- 17:15 A18 MECHANISMS OF HYPERBARIC OXYGEN (HBO) – INDUCED ADAPTIVE RESPONSE
Andreas Rothfu , P. Radermacher, G. Speit (Germany)

17:30 – 18:45 SESSION D**CLINICAL HYPERBARIC OXYGEN THERAPY I**

Chairpersons: **Robert C. Bornmann, USA**
Leon J. Greenbaum, USA

- 17:30 A19 DOCUMENTATION OF THE EFFECT OF HYPERBARIC OXYGENATION FOR CEREBRAL PALSY AND THE BRAIN INJURED CHILD – SEQUENTIAL SPECT IMAGING
Richard A. Neubauer (USA)
- 17:45 A20 HYPERBARIC TREATMENT OF NECROTISING SOFT TISSUE INFECTIONS: HOW MANY SESSIONS ARE NECESSARY?
Joachim Hencke, A. Jakopin, C.-M. Grosse-Wietfeld, R. Wetsch (Germany)
- 18:00 A21 HYPERBARIC OXYGEN IN THE TREATMENT OF THERMAL BURNS – EXPERIENCES WITH CHILDREN AND ELDERLY PEOPLE
Heiko Renner, C. May, S. Gabor, H. Klemen, B. Hellbom, U. Anegg, A. Maier, H. Pinter, F.-M. Smolle-J ttner (Austria)
- 18:15 A22 APPLICATION OF THE HBO THERAPY BY CROHN DISEASE WITH FISTULA FORMATION
Oliver W. Jacobs, J. Rebhen, M. K. M ller (Germany)
- 18:15 A3 HYPERBARIC OXYGEN THERAPY ON 17th OF AUGUST EARTHQUAKE IN MARMARA
Senol Yildiz, S.  zkan, K. D ndar (Turkey)

19:00 – 20:00 WELCOME RECEPTION at the Hotel Inter Continental

20.00 **  INDIVIDUAL HAMBURG EVENING  **

Scientific Programme

FRIDAY, SEPTEMBER 14, 2001

(09:00 – 18:00 Full Day Excursion 2nd International “Arthur-Bornstein.Workshop” on Compressed Air Work and Deep Diving in Tunnel Construction (Workshop Participants))

08:30 – 10:30 SESSION E

DIVING MEDICINE II (DAN EUROPE SECTION)

Chairpersons: **Ioannis Polichronidis, Greece**
Kay Tetzlaff, Germany

08:30 KEYNOTE LECTURE

DIVERS ALERT NETWORK EUROPE – LOOKING BACK OF TEN YEARS ACTIVITIES
Alessandro Marroni
DAN Europe Operations Headquarters, Roseto, Italy

- 09:00 A23 INFLUENCE OF SYMPATHIC INNERVATION ON THE HEART RATE DURING SCUBA DIVING. PRELIMINARY RESULTS
Stefaan Deneweth, H. Vanbogaert, M. Lambrechts, A. Marroni, R. Cali Corleo, C. Balestra, P. Germonpré (Belgium)
- 09:15 A24 ENHANCED LYMPHATIC CAPTATION OF PROTEINS DURING NORMOBARIC OXYGEN BREATHING. A LYMPHOSCINTIGRAPHY STUDY
Thyl Snoeck, M. Ezquer, O. Leduc, A. Leduc, F. Willeput, C. Ballestra, A. Marroni, R. Cali Corleo, P. Germonpré (Belgium)
- 09:30 A25 THE USE OF A „PROPORTIONAL M-VALUE REDUCTION CONCEPT“ (PMRC) CHANGING THE ASCENT PROFILE WITH THE INTRODUCTION OF EXTRA DEEP STOPS REDUCES THE PRODUCTION OF CIRCULATION VENOUS GAS EMBOLI AFTER COMPRESSED AIR DIVING. DSL SPECIAL PROJECT 01/2001
Alessandro Marroni, R. Cali Corleo, C. Balestra, P. Longobardi, P. Germonpré, E. Voellm, M. Pieri, R. Pepoli (Italy)
- 09:45 A26 THE SPEED OF ASCENT DILEMMA: “INSTANT SPEED OF ASCENT” OR “TIME TO SURFACE” – WHICH ONE REALLY MATTERS? INSTANT SPEED OF ASCENT VS. DELTA-P IN THE LEADING TISSUE AND POST-DIVE DOPPLER BUBBLE PRODUCTION. DSL SPECIAL PROJECT 02/2001
Alessandro Marroni, R. Cali Corleo, C. Balestra, P. Longobardi, P. Germonpré, E. Voellm, M. Pieri, R. Pepoli (Italy)
- 10:00 A27 INCIDENCE OF ASYMPTOMATIC CIRCULATING VENOUS GAS EMBOLI IN UNRESTRICTED, UNEVENTFUL RECREATIONAL DIVING. SKIN COOLING APPEARS TO BE RELATED TO POST-DIVE DOPPLER DETECTABLE BUBBLE PRODUCTION. AN UNEXPECTED FINDING. DSL SPECIAL PROJECT 03/2001
Alessandro Marroni, R. Cali Corleo, C. Balestra, P. Longobardi, P. Germonpré, E. Voellm, M. Pieri, R. Pepoli (Italy)
- 10:15 A28 CEREBRAL LACUNARY SPOTS IN RELATION TO PATENCY OF FORAMEN OVALE, AN MRI INVESTIGATION
Brigitte Farkas, E. Duboc, C. Pietrons, J. Widelec, F. Vanderschueren, C. Balestra, A. Marroni, R. Cali Corleo, P. Germonpré (Belgium)

10:30 – 11:00 COFFEE BREAK

11:00 – 13:00 SESSION F**APNEA DIVING, HYPOTHERMIA, PHYSIOLOGY**

Chairpersons: **Jean-Louis Méliet, France**
Peter Müller, Germany

11:00 KEYNOTE LECTURE**NEW DETAILS IN APNEA DIVING PHYSIOLOGY**

Peter Radermacher
University of Ulm, Ulm, Germany

- 11:30 A29 INSPIRED AIR TEMPERATURE AND HUMIDITY DO NOT INFLUENCE BRAIN STEM TEMPERATURE: IMPLICATIONS FOR INHALATION REWARMING THERAPY OF HYPOTHERMIC VICTIMS
Igor B. Mekjavic, K. Rogelj, M. Radobuljac, O. Eiken (Slovenia)
- 11:45 A30 HUMAN BEHAVIOURAL THERMOREGULATION DURING HYPOXIC EXPOSURE
Petra Golja, I. B. Mekjavic (Slovenia)
- 12:00 A31 RESCUE LIFTING SYSTEM AND SARRRAH-PROJECT: RECOVERY DEVICE FOR THE RESCUE OF DIVERS AND MEN-OVERBOARD IN ACCIDENTAL HYPOTHERMIA
Wolfgang Baumeier, M. Schwindt, L. Bahlmann, P. Schmucker (Germany)
- 12:15 A32 ARTERIAL BLOOD GAS PARTIAL PRESSURES DURING DIVING IN ELITE APNEA DIVERS
Enrico Calzia, A. Pittner, R. Schabana, S. Hamich, P. Radermacher, C.-M. Muth (Germany)
- 12:30 A33 NEW METHOD FOR RESCUER ARTIFICIAL VENTILATION SUITABLE FOR ENVIRONMENTAL CONDITIONS WITH REDUCED AMBIENT PRESSURE
Till S. Mutzbauer, B. Neubauer, P.H.J. Mueller, K. Tetzlaff (Germany)
- 12:45 A07 COMBINED INFLUENCES OF BREATH-HOLD, VALSALVA MANEUVER, AND INTENSIVE EXERCISE ON HEART RATE AND BLOOD PRESSURE
Uwe Hoffmann, M. Smerecnik, P. Buttgerit, D. Leyk (Germany)

13:00 – 14:15 BREAK FOR LUNCH**14:15 – 16:00 SESSION G****DIVING MEDICINE II**

Chairpersons: **Ramiro Cali-Corleo, Malta**
Wilfried Beuster, Austria

- 14:15 A34 INCREASED NUMBER OF BRAIN LESIONS IN ASYMPTOMATIC DIVERS WITH A PATENT FORAMEN OVALE (PFO)?
Andreas Koch, H. Kirsch, A. Rump, E. Bettinghausen, H. Rieckert, K. Tetzlaff (Germany)
- 14:30 A35 NO INCREASED INCIDENCE OF PATENT FORAMEN (PFO) IN UNEXPLAINED DIVING ACCIDENTS (DCS II) WITHOUT OBVIOUS MRI-LESIONS
Andreas Koch, A. Rump, P. McCormack, E. Bettinghausen, H. Rieckert (Germany)
- 14:45 A36 THE RISK OF DECOMPRESSION SICKNESS CAUSED BY HYPOBARIC ENVIRONMENT EXPOSURE AFTER DIVING (DRIVING TO ALTITUDE AND FLYING)
Nobuo Naraki, M. Mohri (Japan)

- 15:00 A37 MEDICAL PROBLEMS IN RECREATIONAL DIVERS IN YUGOSLAVIA: ASSESSMENT OF FITNESS TO DIVE AND ANALYSIS OF DIVING RELATED INJURIES DURING THE PERIOD 1994-1998
Dragana Ivkovic, N. Dekleva, N. Dikic, M. Zarkovic, B.M. Zivojnovic, M. Djuknic, Z. Vidovic, A. Marroni (Yugoslavia)
- 15:15 A38 THE INFLUENCE OF INCREASED PRESSURE AND INCREASED OXYGEN PARTIAL PRESSURE ON THE CORROSION OF DENTAL ALLOYS
Frank Heblich, R. Lenz, K. Ludwig (Germany)
- 15:30 A39 MANAGEMENT OF A COMPLEX DIVING ACCIDENT – A CASE REPORT OF RELAPSED ARTERIAL GASEMBOLISM (VIDEO-PRESENTATION)
Armin Kemmer, Adel Taher (Germany)

15:45 – 16:15 COFFEE BREAK

16:15 – 17:15 SESSION H

HYPERBARIC OXYGEN TECHNOLOGY & VALIDATION

Chairpersons: **Costantino Balestra, Belgium**
Alexis Rump, Germany

- 16:15 A40 PROJECT HORTIS: INVESTIGATING RADIOTHERAPY-INDUCED LATE EFFECTS OF NORMAL TISSUE WITH HYPERBARIC OXYGENATION
Dick Clarke (USA)
- 16:30 N.A. USE OF MONOPLACE HYPERBARIC CHAMBERS IN DIVING CENTRES: REFLECTIONS COMING FROM THE EXPERIENCE IN REAL CASES
Jordi Desola (Spain)
- 16:45 A41 THERAPEUTICAL HYPERBARIC FACILITIES IN EUROPE ARE MEDICAL DEVICES: CONSEQUENCES
Robert Houman (Belgium)
- 17:00 N.A. MINIMUM STANDARDS OF HYPERBARIC OXYGEN THERAPY IN AUSTRIA
Roswitha Prohaska, Clemens Mader, Wilfried Beuster, Wilhelm Welslau, Freya-Maria Smolle-Jüttner

17:30 – 18:15 EUBS MEMBERS ANNUAL BUSINESS MEETING

18:30 BUS DEPARTURE FOR RECEPTION & “RICKMER RICKMERS”

19:00 RECEPTION BY THE MAYOR OF HAMBURG

20:00 – 24:00 ☺ SOCIAL EVENING ABOARD HISTORICAL “RICKMER RICKMERS” ☺

Scientific Programme
SATURDAY, SEPTEMBER 15, 2001

09:00 – 10:30 SESSION I

POSTER PRESENTATIONS & DISCUSSION

Chairpersons: **Jürg Wendling, Switzerland**
Claus-Martin Muth, Germany

- A42 NECROTISING FASCIITIS, TRUNCAL AND NECK INVOLVEMENT, SUCCESSFULLY TREATED SURGICALLY, ANTIBIOTICS AND HYPERBARIC OXYGENATION: A CASE REPORT
Dusko Micevic, M. Dragan, S. Vojkan, S. Vladislav, B. Ivanko, R. Slobodan (Yugoslavia)
- A43 HYPERBARIC OXYGEN THERAPY AS A TREATMENT MODALITY FOR CALCIPHYLAXIS
Andreja Marn Pernat, R. Kveder, A. F. Bren, R. Ponikvar, I. B. Mekjavic (Slovenia)
- A44 NEUROPROTECTION BY THE USE OF HYPERBARIC OXYGENATION AFTER PERMANENT FOCAL CEREBRAL ISCHEMIA
Holger Schade, W.-R. Schäbitz, R. Kollmar, J. Bardutzky, S. Heiland, S. Schwab, U. Carl (Germany)
- A45 LEIPZIG'S HBO AMBULANCY: FINANCIAL ASPECTS
Harald Englisch, D. Kühnert (Germany)
- A46 STRESS-INDUCED HORMONAL AND MOOD RESPONSES IN SCUBA DIVERS: A FIELD STUDY.
Udo Anegg, G. Dietmaier, A. Maier, F. Tomaselli, S. Gabor, K.-W. Kallus, F.-M. Schmolle-Jüttner (Austria)
- A47 MEASUREMENT OF THE RADIOACTIVITY OF THE ADRIATIC SEA IN BOMBED AREA OF CAPE ARZA, BOKA BAY, MONTENEGRO, YUGOSLAVIA
Nenad Dikic, B.M. Zivojnovic, D. Ivkovic, S. Pavlovic, R. Pavlovic, M. Savovski, P. Radivkovic, S. Crnkovic, B. Markovic, N. Dekleva (Yugoslavia)
- A48 EARLY 20TH-CENTURY HYPERBARIC RESEARCH IN HAMBURG - THE WORKS OF ARTHUR AND ADELE BORNSTEIN
Karl-Peter Faesecke (Germany)
- A49 FIRE FIGHTING COURSE IN THE HYPERBARIC ENVIRONMENT
Peter Germonpré, R. Houman (Belgium)

10:30 – 11:00 COFFEE BREAK

11:00 – 12:15 SESSION J

CINICAL HYPERBARIC OXYGEN THERAPY II

Chairpersons: **Peter Radermacher, Germany**
Clemens Mader, Austria

11:00 KEYNOTE LECTURE

THE ROLE OF HYPERBARIC OXYGEN THERAPY IN RADIOTHERAPY
Ulrich M. Carl
Diakoniekrankenhaus Rotenburg/W., Germany

- 11:30 A50 HYPERBARIC OXYGEN THERAPY: TREATMENT RESULTS IN THERAPY RESISTANT POSTIRRADIATION COMPLICATIONS IN PROSTATE TUMORS
Heiko Renner, R. Mayer, S. Gabor, H. Klemen, A. Hackl, F.-M. Smolle-Jüttner (Austria)
- 11:45 A51 LATE RADIATION SEQUELAE IN WOMEN AFTER BREAST CONSERVING CANCER THERAPY: EFFECTS OF HYPERBARIC OXYGEN THERAPY (HBO)
Ulrich M. Carl, J. J. Feldmeier, G. Schmitt, K. A. Hartmann (Germany)
- 12:00 A52 EFFECTS OF HYPERBARIC OXYGEN THERAPY (HBO) AND NORMOBARIC CARBOGEN ON THE RADIATION RESPONSE OF THE RHABDOMYOSARCOMA R1H
Ulrich M. Carl, K. A. Hartmann, A.J. van der Kleij, P. Sminia (Germany)

12:15 – 14:00 BREAK FOR LUNCH

14:00 – 17:00 SESSION K

CLINICAL HYPERBARIC OXYGEN THERAPY III

Chairpersons: **Martin Hamilton-Farrell, England**
Ulrich M. Carl, Germany

- 14:00 A53 HYPERBARIC OXYGEN FOR THE TREATMENT OF IATROGENIC ARTERIAL GAS EMBOLISM: CASE REPORT
Michaela Ignatescu, P. Longobardi, F. Sfogliafferri, F. De Pasquale, S. Maitan, C. Olivieri, M. Baccanelli (Italy)
- 14:15 A54 A PILOT STUDY OF HYPERBARIC OXYGEN THERAPY IN PATIENTS WITH FAECAL INCONTINENCE ASSOCIATED WITH PUDENDAL NERVE NEUROPATHY. EARLY RESULTS
Gerard Laden, J. Cundall, A. Gardiner, P. Grout, G. S. Duthie (England)
- 14:30 A55 HYPERBARIC OXYGEN THERAPY IMPROVES CLINICAL EFFECTS OF TRANSMYOCARDIAL LASER REVASCULARISATION AND CABG
Jacek Kot, Z. Sicko, L. Anisimowicz, M. Narkiewicz, W. Pawlitzak, P. Betlejewski (Poland)
- 14:45 A56 THE ROLE OF HBO-THERAPY IN THE TREATMENT OF OSTEOMYELITIS OF THE JAW. A RETROSPECTIVE ANALYSIS OF PATIENTS TREATED AT THE DEPARTMENT OF CRANIO-MAXILLOFACIAL SURGERY IN ZÜRICH (1988-2000).
Marc Baltensperger, O. Keller, A. Gönen, K. Grätz, J. Schmutz (Switzerland)

15:00 – 15:30 COFFEE BREAK

15:30 INVITED LECTURE

MEDICAL CHALLENGES DURING THE CONSTRUCTION OF THE RECENTLY COMPLETED LATEST HAMBURG ELBE-TUNNEL
Karl-Peter Faesecke
HyperMedConsult, Hamburg

16:15 EUBS CLOSING CEREMONY

16:45 – 19:00 GTÜM EXECUTIVE COMMITTEE BUSINESS MEETING

19:30 BUS DEPARTURE FOR RECEPTION “GRÖNINGER BREWERY”

20:00 – 24:00 ☺ FAREWELL EVENING AT “GRÖNINGER BREWERY” ☺



SSMSH SOCIÉTÉ SUISSE DE MÉDECINE
SUBAQUATIQUE ET HYPERBARE
SGUHM SCHWEIZERISCHE GESELLSCHAFT
FÜR UNTERWASSER- UND HYPERBARMEDIZIN
SSMS SOCIETÀ SVIZZERA DI MEDICINA
SUBAQUEA ED IPERBARICA
SUHMS SWISS UNDERWATER &
HYPERBARIC MEDICAL SOCIETY



Das neue Manual „Tauchtauglichkeit“ von GTÜM, SGUHM und ÖGTH

**Präsentation und Workshop in deutscher Sprache
im Anschluss an das EUBS 2001 Annual Scientific Meeting in Hamburg**

Sonntag, 16. September 2001, 0900 bis 1600 Uhr, Hotel Inter Continental Hamburg

Programm

- Grußwort der Präsidenten GTÜM, SGUHM und ÖGTH
- Präsentation des Projektes eines gemeinsamen Manuals
- Der Weg zu gemeinsamen Standards
- Risiken und Gefahren beim Tauchen
- Der Beitrag der medizinischen Tauglichkeitsuntersuchung zur Tauchsicherheit
- Gibt es allgemein gültige Kriterien für die Tauglichkeit?
- Tauchtauglichkeit zwischen Beruf und Hobby
- Schlaglichter aus dem Tauchtauglichkeit Manual (Diskussion mit Beteiligung des Auditoriums):
 - Probleme rund um den Schwindel
 - Wie viel Kondition ist genug ?
 - Wie gefährlich ist ein PFO ?
 - Air-trapping: Lungenkrankheit oder Tauchunfallereignis?
 - Trotz Asthma in die Tiefe ?
 - Parästhesien und Tauchen
 - Wie geht es weiter nach Tauchunfall ?
 - Ist ein gelähmter Patient tauchtauglich ?
 - Wie erkenne ich die Prädisposition zur Panik ?
 - Der Spontanpneumothorax als Ausschlussgrund ?
 - Wie geht es weiter nach Schädel-Hirn-Trauma ?
 - Diabetes als Handicap
 - Wer ist zu jung ?
 - Wer ist zu alt ?
 - Medikamenteneinnahme als Kontraindikation
- Die Richtlinien für den Untersuchungsgang
- Kosten der Tauchtauglichkeitsuntersuchung
- Das Tauglichkeitsattest
- Ausblick und Abschluss

Referenten und Diskussionsteilnehmer

Oskar Ehm, Jürg Wendling, Uwe Hoffmann, Peter Müller, Frank Böhm, Peter Nussberger, Wolfgang Förster, Karl-Peter Faesecke, Wilfried Beuster, Jürgen Wenzel, Ulrich van Laak, u. a., sowie das Auditorium.

Zielgruppe Teilnehmer

Ärzte, die nach den Richtlinien der drei deutschsprachigen tauchmedizinischen Fachgesellschaften Tauchtauglichkeitsatteste ausstellen, interessierte Gäste.

Kosten

Für die Teilnehmer des EUBS 2001 Annual Scientific Meetings FREI – für Nicht-Teilnehmer des EUBS 2001 Annual Scientific Meetings sind Tageskarten zum Preis von **€80,00** erhältlich.

Anmeldung

- Schriftlich über „Registration Form EUBS 2001“
- On-line über www.eubs2001.de

MEETING ANNOUNCEMENTS

WORLD CONGRESS OF DROWNING, 2002 BREATH-HOLD, SCUBA AND HOSE DIVING

Amsterdam on 26, 27 and 28 June 2002

Recreational scuba diving is recognised as a safe sporting activity. There are relatively few accidents compared with other sports although, when an accident does occur in the water, it happens in a very unforgiving environment. What might be an insignificant incident at the surface can start a sequence of events that quickly escalates to become life-threatening. The environment in which this happens is also the probable reason why up to some 60 per cent of in-water diving fatalities meet their deaths by drowning. Drowning is the *mode* of their deaths, but not the cause. In examining the *causes* of drowning in divers, one must look at the way in which people dive. To reduce the risk of drowning in divers one must address not only their in-water procedures but also basic issues such as fitness, training and equipment.

For this reason the diving community has been invited to participate in the **World Congress of Drowning** to be held in Amsterdam on 26, 27 and 28 June 2002. This Congress was initiated by *The Society to Rescue Persons from Drowning* that was founded there in 1767. Partners in this venture include the International Federation of Red Cross and Red Crescent, ILS (International Life Saving) and DAN.

The aims of the Congress are

- to make recommendations on the prevention, rescue and treatment of drowning victims;
- to stimulate and facilitate initiatives to further promote the prevention of drowning;
- to reduce the number of drowning victims;
- to improve the survival rate and outcome of drowning victims.

“Breath-hold, scuba and hose diving” is thus just one of around 10 task forces convened to review particular aspects of this vast topic. Other task forces (and Chairpersons) include

- Epidemiology (Christine Branche, CDC, Atlanta)
- Rescue from the water (Chris Brewster, International Life Saving Federation, USA)

- Resuscitation (Paul Pepe, Emergency Medicine, University of Texas)
- Hospital treatment I (Jean Louis Vincent, Erasmus Hospital, Brussels)
- Immersion hypothermia (Beat Walpoth, University Hospital, Insel, Switzerland)
- Brain (David Warner, Duke University Medical Center, USA)

The diving task force covers the hazards associated with all types of diving. This includes recreational diving of every variety. It also covers subsistence fishermen-divers in the third world divers, most of whom have inadequate equipment and no proper training and who have an unknown rate of in-water incidents. The other large group is military and working divers who follow procedures that for them should make the risk of drowning negligible.

A number of drowning fatalities in divers occurs among divers who may have made an avoidable error or who may have been subjected to one. After reviewing such accidents the task force has prepared draft recommendations and reviewed those submitted by others. The following topics are among the questions that they consider deserve discussion at the World Congress.

Should diver certification last a lifetime, or is there a need for re-certification after a few years? What changes can be recommended in the training of divers and diving instructors that might enhance diving safety? Should a once-only medical declaration that was made before training potentially last for a lifetime? Is there a minimum age for diving as one of a buddy-pair? Should there be a greater emphasis at all levels of recreational diver training on the causation of known in-water fatalities?

Visit the web site for more details about the Congress, its task forces and the arrangements. Some 60 task force members from 20 nations have prepared formal presentations and reviewed the many recommendations for the Congress. Each task force has a summary of its proposed agenda,

each will have a plenary session for all and then a number of sessions on selected diving topics. So look through the recommendations in the diving section. Because they come from a wide range of sources, some appear worthwhile but others may not be universally acceptable. These will be discussed and, where appropriate, their implementation will be reviewed at the Congress in Amsterdam, 2002.

You can also write for more information to the

**World Congress of Diving 2002 Secretariat
c/o Consumer Safety Institute
PO Box 75169
1070 AD Amsterdam
The Netherlands
or e-mail <Secretariat@drowning.nl>**

THE MEDICAL ASSESSMENT OF FITNESS FOR RECREATIONAL AND WORKING DIVERS

The Sheraton Airport Hotel, Amsterdam

1st & 2nd December, 2001

Last year's meeting "Medical Assessment of Fitness to Dive" at The Royal Society of Medicine, London was run by Biomedical Seminars in association with the Medical Subcommittee of the European Diving Technology Committee. A request was made there that Biomedical Seminars run a course in this series on mainland Europe. This year the meeting will be held at the 5-star Sheraton Hotel in Schiphol Airport. The hotel is just 5 minutes by covered walkway from the Amsterdam airport terminal that also has its own station with frequent international trains, so this should be an easy place for everyone to reach.

The programme will follow the format of previous years with one or more special topics in the spotlight. Among those joining Dr McIver and Prof Elliott as speakers will be Dr Feenstra (otolaryngology); Dr van Hulst (PFTs); Dr Sterk (on occupational problems of tunnellers and divers); Dr Wendling (EDTC proposed harmonisation of standards for working divers); Dr Mueller (on the German-language meeting on diver fitness). In addition to a general review of some clinical decisions relating to diver fitness in the UK, recent policy changes in the HSE approval of doctors living in Europe but outside the UK and more so for those doctors living outside Europe will be explained by Dr Williams (HSE). The role of the International Marine Contractors Association (IMCA) will be reviewed. The newly revised RSTC medical guidance on recreational diver fitness reveals other issues that also deserve discussion in this context.

The 2-day registration fee is being maintained at last year's UK pounds 210 (Nfl 760) for early

registrants. This includes lunch on Saturday and Sunday, and tea, coffee and biscuits throughout each day. From 1st October the fees will become UK pounds 230 (Nfl 830) and non-cancellable. Cheques made payable to Biomedical Seminars in UK pounds or Netherlands guilders are acceptable but we regret that we cannot accept credit card payment. A special weekend rate of around UK pounds 90 per night (approx Nfl 300) will be offered by the Sheraton to registrants quoting 'Biomedical Seminars'. Full details are available from Karen Reeves, Biomedical Seminars, 7 Lyncroft Gardens, Ewell, Surrey, England KT17 1UR. Fax (+44)208 7867036. Email: Karen@biomedseminars.demon.co.uk

REGISTRATION for "The Medical Assessment of Fitness for Recreational and Working Divers" at The Sheraton Airport Hotel, Amsterdam, 1st & 2nd December 2001. I enclose a cheque for UK pounds 210 (or Nfl 760) made payable to Biomedical Seminars.

Name

Address

E-mail address

Mail to:

Mrs Reeves
Biomedical Seminars
7 Lyncroft Gardens
Ewell, Surrey
England KT17 1UR

INSTRUCTIONS TO AUTHORS

The **Europ J Underw Hyperb Med** welcomes contributions (including letters to the Editor) on all aspects of diving and of hyperbaric medicine. Manuscripts must be offered exclusively to the **Europ J Underw Hyperb Med**, unless clearly authenticated copyright exemption accompanies the manuscript. All manuscripts will be subject to peer review, with feedback to the authors. Accepted contributions will be subject to editing.

Manuscripts are accepted in English, and also in major European languages (French, Spanish, Italian and German) when accompanied by an English abstract and a letter of recommendation of a member of the **International Editorial Board**.

Contributions should be sent to

Dr. Peter HJ Mueller, Editor EUJHM, C/o HBO-Zentrum Rhein-Neckar am Diakoniekrankenhaus Mannheim, Speyerer Strasse 91-93, D-68163 Mannheim/Germany. Fax: +49-621-8102 393. Phone: +49-621-8102 390. E-mail: eubs@hbo-mannheim.de

Requirements for Manuscripts

The **Europ J Underw Hyperb Med** is composed on a PC using Word processing. Documents are acceptable on disc or by e-mail. Illustrations and tables should **NOT** be embedded in the Word document, only their position indicated. All tables are to be separate documents. Illustrations should be separate documents in Word or TIFF, clearly marked with the format used. **References should be in the correct format, shown in the next column.** Submissions must be accompanied by two printed copies of all text, tables and illustrations.

The printed copies should be double-spaced, using both upper and lower case, on one side of the paper only, on A4 paper. Headings should conform to the format in the **Journal**. All pages should be numbered. No part of the text should be underlined. These requirements also apply to the abstract, references, and legends to figures. Measurements are to be in SI units (mm Hg are acceptable for blood pressure measurements) and normal ranges should be included. All tables should be double spaced on separate sheets of paper. **No vertical or horizontal rules are to be used.**

Photographs should be glossy black-and-white and slides should be converted to photographs before being sent. Colour reproduction is not available. Legends should be less than 40 words, and indicate magnification.

Abbreviations do not mean the same to all readers. To avoid confusion they should only be used after they have appeared in brackets after the complete expression, e.g. decompression illness (DCI) can thereafter be referred to as DCI.

The preferred length for original articles is 2,500 words or less. Inclusion of more than 5 authors requires justification. Original articles should include a title page, given the title of the paper and the first names and surnames of the authors, an abstract of no more than 200 words and except in unusual situations be subdivided into Introduction, Methods, Results, Discussion and References. After the references the authors should provide their initials and surnames, their qualifications, and the positions held when doing the work being reported. One author should be identified as Correspondent for the Editor and for readers of the Journal. The full current postal address of each author, with the Telephone, facsimile numbers and e-mail address of the corresponding author, should be supplied with the contribution. No more than 20 references per major article will be

accepted. Accuracy of the references is the responsibility of authors. Acknowledgments should be brief.

Abstracts are also required for all case reports and reviews. Letters to the Editor should not exceed 400 words (including references which should be limited to 5 per letter).

References

Authors are responsible for verifying references against the original documents. References must be numbered consecutively in the order in which they first appear in the text, and identified in the text by arabic numerals in parentheses. References cited only in tables or legends should be numbered in accordance with a sequence corresponding to the first mention of the table or figure in the text. The reference list must be double spaced. List names and initials of all authors when six or less, when seven or more, list only the first three authors and add et al. Citations in the reference list are to be in the form used by the U. S. National Library of Medicine and *Index Medicus*.

1. Thorsen E, Risberg J, Segadal K, Hope A. Effects of venous gas microemboli on pulmonary gas transfer function. *Undersea Hyperbaric Med* 1995; 22:347-353.
2. Hempleman HV. History of decompression procedures. In: Bennett PB, Elliott EH, eds. *The physiology and medicine of diving*. London: WB Saunders, 1993:324-375.
3. Kindwall EP, Goldmann RW. *Hyperbaric medicine procedures*. Milwaukee, WI: St. Luke's Medical Center, 1970.

Manuscripts that have been accepted should be cited in the reference list as regular references, with "in press" in place of journal pages. Citations such as "unpublished observations", "personal communication", "manuscript in preparation", or "to be published" are not to appear in the reference list, although reference to such a communication, if it exists in written form, may be cited in the text in parentheses. References to government reports should not be cited unless such reports are easily available to all readers.

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The **EUBS** endorses the principles of the Declaration of Helsinki on the treatment of human subjects and approved guiding principles in the care and use of animals. Any report of experimental investigation on human subjects must contain evidence of informed consent by the subjects and of approval by the relevant institutional ethical committee.

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