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### Corporate members :

*ACHOBEL Belgium  
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#### Editorial

Like I said in the last issue, Europe catches up with us. In the future, national regulations will be more and more referenced to European regulations and by this way will become harmonised. The proposed article in this issue is a nice example of a harmonised document. This article written by Dr Jacek KOT, (Poland) is a excellent introduction to the European Code of Good Practice for Hyperbaric Oxygen Therapy. The objectives of the Safety Working Group are to continue the job of the Technical Aspects Working Group, conducted under my direction. This working group is part of the European Programme COST (Co-operation in Science and Technology) B14.

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19 European countries participated on this programme and therefore the proposed code can be considered as a real European harmonised document!

Of course, as in any harmonised document, the recommendations are the result of consensus between the members, and it is possible that you don't agree on certain points of this code. But, the recommendations are, like a norm or standard, the minimum requirements to fulfill the conditions for « good practice ».

I invite you to visit the website [www.oxynet.org](http://www.oxynet.org) where the code will be published before the end of 2004 in full text. I hope that the code will be available in different languages in the future (for the French translation, it will be possible in December).

In this issue, as promised, you will also find a resume of our last General Assembly and Board of Directors. Finally, I would like to bring to your attention; a new heading devoted to a review of articles published by others hyperbaric associations.

Please don't forget, if you need information or registration forms, etc visit our website at: [www.ebass.org](http://www.ebass.org).

I wish you good reading !

Robert Homan  
President

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## A EUROPEAN CODE OF GOOD PRACTICE FOR HYPERBARIC OXYGEN THERAPY

J. Kot, J. Desola, A. Gata Simao, R. Gough-Allen, R. Houman, J.-L. Méliet, F. Galland, C. Mortensen, P. Müller, S. Sipilinen. COST B14 action « Hyperbaric Oxygen Therapy », WG « Safety ».

### Introduction

Hyperbaric medicine (HBO) was established in Europe. The first pressure chamber (Henshaw, 1662), describing the effects of increased pressure (Bert, 1878), the first mobile pressure room (Fontaine, 1879), the first decompression tables (Haldane, 1908), the first diving and pressure simulator (Dräger, 1913), the high oxygen environment (Churchill-Davidson, 1955), application of hyperbaric oxygen in surgery (Boerema, 1956), in anaerobic infections (Brummelkamp, 1961), and in carbon monoxide poisoning (Smith & Sharp, 1962), as well as the first International Congress on Hyperbaric Oxygenation (Amsterdam, 1963) had all been introduced in Europe [1]. The usage of pressure chambers in recompression of tunnel/caisson workers and divers came later than the application of pressure for other therapeutic purposes, however the largest experience in operating hyperbaric chambers came from working in the underwater environment, and until recently hyperbaric chambers were built and operated according to diving rules and regulations. Increasing interest in the application of HBO in different medical conditions, including critically ill patients, has led to situations in which hyperbaric chambers are now treated as medical devices, and therefore specific regulations are needed. It is worthwhile to notice that Standards, Guidelines or Regulations have previously been published on the national levels in those countries which have large diving experience and traditions (e.g. France, United Kingdom, Germany, USA).

Today there is a need for a harmonised European Regulation for HBO. A lot of work has been done already [2]. There are publications for internationally approved indications for HBO treatment (ECHM, UHMS), conclusions from Consensus Conferences on hyperbaric oxygenation [3, 4], educational and training standards for hyperbaric staff [5] and recommendations for safety in medical chambers [6, 7]. In this paper we present a European Code of Good Practice (ECGP) for HBO which is an international document prepared by the members of the COST B14 Action concerning safety of hyperbaric treatment based on existing experience from experts of hyperbaric centres, committees, professional and scientific associations.

### Background

Founded in 1971, COST is an intergovernmental framework for European Co-operation in the field of Scientific and Technical Research, allowing the co-ordination of nationally funded research on a European level.

In 1998 the Action B14 was started as part of the COST domain «Medicine and Health» under the title «Hyperbaric Oxygen Therapy». The national representatives of 19 European countries (Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Israel, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom) signed a Memorandum of Understanding. Each country designated national experts in hyperbaric medicine to participate in this program and Professor Daniel Mathieu was nominated as Chairman of that Action. The main objective of the Action is to improve the knowledge required for a rational use of hyperbaric oxygen therapy, to a level making it possible to set out specific guidelines for the implementation and development of clinical centres for HBO and to provide scientifically sound recommendations for HBO treatment of various diseases and conditions. Since the beginning several Working Groups (WG) have been created to fulfil specific tasks under the main objective of the Action. One WG created the OXYNET, which is an Internet portal for Hyperbaric Oxygen Therapy ([www.oxynet.org](http://www.oxynet.org)), another published a «Research Guidance Document» specifying the quality criteria desired for any new and ongoing research projects on HBO. Several other WG's prepared research protocols which have been implemented to conduct the prospective, multi-centre clinical studies concerning HBO in the treatment of sudden idiopathic sensorineural hearing loss, foot lesions in diabetic patients, femoral head necrosis, late irradiation sequelae in the pelvic region, reirradiation of recurrent squamous cell carcinoma of the head and neck, enhancing radio sensitivity on glioblastoma multiforme, and osteointegration in irradiated patients.

In 2000 the Working Group «Technical Aspects» (WGT) was formed and by 2001 it's main objective was initiated with the starting of the harmonisation process of a European norm for hyperbaric chambers and systems and WGT prepared the hazard identification for HBO as a part of a risk analysis [8, 9].

In 2001 the Working Group «Safety» was created with the main objective to elaborate recommendations of good practice for hyperbaric medicine and to follow the European normalisation process of hyperbaric chambers [10].

## Methods

During three years of work the relevant documents regarding safety in hyperbaric chambers from each European country have been reviewed by the members of the WG «Safety». The British Hyperbaric Association (BHA) «Health and Safety for Therapeutic Hyperbaric Facilities: A Code of Practice» (2000) [11] was accepted as a basis for the creation of the European Code of Good Practice for HBO. In the process of preparation, the preliminary version of the ECGP was constantly being modified and updated using national regulations and standards from different countries, mainly Belgium, Finland, France [12], Germany, Greece, Italy [13], Portugal, and Spain. Existing European Norms concerning hyperbaric chambers were referenced to, and experience from experts of hyperbaric centres, committees, professional and scientific associations were included to create the state-of-art in safety of the hyperbaric medicine.

During the process, the WG «Safety» closely cooperated with the CEN/BT/Task Force 127 (TF127) which was preparing the project of the European Norm entitled «Pressure vessels for human occupancy (PVHO) – Multi-place pressure chambers for hyperbaric therapy – Performance, safety requirements and testing» (prEN14931) [14]. The representative of the WG «Safety» was also participating in the TF127 meetings to present the opinion of the hyperbaric chambers' users to manufacturers and to ensure that the technical aspects of hyperbaric systems included in this new European Norm were reflected in the ECGP for HBO.

## Results

Finally, in May 2004 the last version of the ECGP for HBO was accepted by the hyperbaric experts of the Management Committee of the COST B14 Action. This means that this document was ready to be implemented in European countries.

The ECGP for HBO relates to hyperbaric treatment as a procedure affecting patients, staff and any third parties involved in the therapeutic process and not to the medical protocols by themselves unless these protocols modify the level of safety. It applies to all facilities for hyperbaric medicine that provide hyperbaric treatments to patients, as well as to medical research exposing human subjects to a hyperbaric environment.

The document consists of chapters dedicated to staffing, equipment, gas supply, risk management and procedures.

The chapter on staffing includes responsibilities, competencies and education, minimum team sizes during hyperbaric sessions both for mono- and multiplace chambers, fitness and health surveillance. The ECGP uses the functions and educational requirements defined by the European Committee for Hyperbaric Medicine (ECHM). The ECHM documents «Educational and Training Standards for the Staff of Hyperbaric Centres» (1997) [5] and «Recommendation for Safety in Multiplace Medical Hyperbaric Chambers» (1998) [6] are included in the ECGP as annexes.

Chapters on equipment and gas supplies are linked with the prEN 14931 prepared by TF127 making both documents complementary.

A separate chapter is devoted to the risk management being conducted according to ISO EN 14971 [15]. The process of risk analysis, risk evaluation and risk control is presented with some detailed specific hazards of hyperbaric treatments, namely oxygen toxicity, dysbaric injuries, thermal stress, electrical and fire safety, prohibited materials, and manual handling. The final report of the WG «Technical Aspects» (2001) [9] is also included as an annex. It consists of the list of hazards related to the hyperbaric installation and to the use of medical devices during HBO treatment. This is a part of risk analysis conducted specifically for therapeutic hyperbaric facilities.

The chapter on procedures includes description of standard and emergency operating procedures, maintenance, record keeping, and patient safety. The framework of an operating manual for hyperbaric systems is included as an annex.

Every effort has been made to make the ECGP for HBO compatible with the new project of the European Norm prEN 14931: Both groups - CEN/BT/TF 127 and COST B14 WG «Safety» - co-operated extensively in the field of safety aspects of using hyperbaric chambers as medical devices, and both final versions of each document include many cross references. The ECGP is focused on safety of the HBO from the point of view of users, and the prEN 14931 is oriented to technical aspects of design and structure of hyperbaric installations, as guidelines for manufacturers.

## Conclusions

The ECGP was prepared by international Working Group «Safety» and after acceptance by all management members of the COST B14 action, the European Code of Good Practice for HBO represents a consensual harmonised European view on safety in therapeutic hyperbaric facilities and should be used as a reference document in European countries in need of Guidelines, Regulations, and Standards in hyperbaric medicine.

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### **List of abbreviations:**

COST: Cooperation in Science and Technology  
BHA: British Hyperbaric Association  
HBO: Hyperbaric Oxygen Therapy  
ECGP: European Code of Good Practice  
ECHM: European Committee for Hyperbaric Medicine – President Prof D. Mathieu (France)  
CEN: Comité Européen de la Normalisation

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### **UN CÓDIGO EUROPEO PARA LA BUENA PRÁCTICA CON LA OXÍGENOTERAPIA HIPERBÁRICA**

J. Kot, J. Desola, A.Gata Simao, R. Gough-Allen, R. Houman, J.L. Meliet, F. Galland, C. Mortensen, P. Mueller S. Sipinen. -GRUPO DE TRABAJO B14 « Seguridad con la Oxigenoterapia Hiperbárica-  
Traducción realizada por Oscar Mora

En 2001 el grupo de trabajo de « SEGURIDAD » fue creado dentro del European COST Action B14 de Oxigenoterapia Hiperbárica con el objetivo principal de elaborar una serie recomendaciones para la buena practica de la medicina hiperbárica y seguir con el proceso europeo de regulación de las cámaras hiperbáricas.

Durante los tres años de preparación del Código Europeo para la Buena Práctica ( ECGP ) de la HBO (Oxigenoterapia hiperbárica), los documentos de cada país europeo, referidos a la seguridad en cámaras hiperbáricas, fueron revisados. El documento inicial echó mano de la BHA - Seguridad y Salud en las terapias

con instalaciones hiperbáricas: Un código para la práctica- (2000), y más tarde fue modificado usando reglas y estándares de algunos países ( Bélgica, Finlandia, Francia, Alemania, Grecia, Italia, Portugal y España), así como también las Normas Europeas y, claro está, la experiencia existente de expertos de centros hiperbáricos, comités, además de asociaciones científicas y profesionales.

El ECGP para HBO consta de capítulos referidos al personal (incluyendo responsabilidades, competencias y formación, equipo de trabajo mínimo durante las sesiones, adaptabilidad y vigilancia de la salud); equipamientos, suministro de gas, cálculo de riesgos y procedimientos ( incluyendo estándares y actuaciones en emergencias, mantenimiento, registros y la seguridad del paciente).

También incluye recomendaciones estándar y educacionales de la ECHM para el personal de los centros hiperbáricos (1997), recomendaciones de la ECHM para seguridad en cámaras hiperbáricas médicas multiplaza (1998); así como también aspectos técnicos del informe final (2001) del grupo de trabajo COST B14, incluyendo un análisis del riesgo específico de las instalaciones terapéuticas hiperbáricas.

Muchos esfuerzos se han usado para hacer el ECGP para HBO compatible con el proyecto nuevo de la Norma Europea prEN 14931 "Recipientes presurizados para la ocupación humana ( PVHO ) - Cámaras de Presión multiplaza para la terapia hiperbárica - Funciones, requisitos de seguridad y comprobaciones" , que han sido preparados simultáneamente por el CEN/BT / TF 127. Ambos grupos (CEN/BT / TF 127 y el Grupo de Trabajo COST B14 « Seguridad ») cooperaron a fondo en el campo de los aspectos de seguridad que han de usar las cámaras médicas hiperbáricas, y las versiones finales de ambos documentos tienen referencias comunes.

Siendo preparado por el Grupo de Trabajo Internacional « SEGURIDAD » y habiendo sido después de la aceptación de todos los miembros del COST B14, el ECGP para la HBO constituye un enfoque europeo armonizado en seguridad de instalaciones terapéuticas hiperbáricas, y puede ser utilizada como documento de referencia, guía, regulación y estándar en medicina hiperbárica.

Nota del editor: El Código Europeo para la Buena Práctica de la Oxigenoterapia Hiperbárica ( ECGP ) está disponible en la Web.

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### Europäischer Verhaltenskodex in der Hyperbarmedizin

J. Kot, J. Desola, A. Gata Simao, R. Gough-Allen, R. Houman, J.L. Meliet, F. Galland, C. Mortensen, P. Mueller, S. Sipinen. COST B14 action «Hyperbaric Oxygen Therapy» WG «Safety»

Text übersetzt von Herrn Wintersdorf

In 2001 wurde die Arbeitsgruppe "Sicherheit" innerhalb der europäischen «Hyperbaric Oxygen Therapy» der COST B14 mit der Hauptzielsetzungen, um Empfehlungen für die Praxis auszuarbeiten und dem europäischen Normierungs-Prozess der hyperbaren Kammern zu folgen.

Während drei Jahren Vorbereitung zur Erstellung des europäischen „Code of good practice“ (ECGP) für HBO, wurden die Dokumente aus allen europäischen Land die Sicherheit in hyperbaren Kammern betreffend durchgesehen. Das Ausgangsdokument, BHA "Gesundheit und Sicherheit in therapeutischen Hyperbar Zentren: Eine allgemeine Vorschrift "(2000) und später wurde mit Hilfe der nationalen Regelungen und Standards (Belgien, Finnland, Frankreich, Deutschland, Griechenland, Italien, Portugal, Spanien), sowie europäischen Normen und vorhandenen Erfahrungen von den Experten der hyperbaren Zentren, professionellern und wissenschaftlichen Ausschüssen, aktualisiert.

Das ECGP für HBO besteht aus den Kapiteln, bezüglich Personal (Verantwortlichkeiten, Kompetenzen und Ausbildung, minimale Mannschaft während der hyperbaren Therapie, Körperliche Fitness und Gesundheitskontrolle), Ausrüstung, Gas-Versorgungsmaterial, Risikomanagement und Prozeduren (Standard und Notfallprozeduren, Wartung, Datenaufzeichnung und Patienten Sicherheit).

Es beinhaltet außerdem die ECHM Ausbildungs- und Trainingsstandards für Personal in hyperbaren Zentren (1997), ECHM Empfehlung für Sicherheit in medizinischen Mehrplatzkammern (1998), sowie den Abschlußbericht der COST B14 Arbeitsgruppe "Technische Aspekte", einschließlich einer spezifischen Gefahrenanalyse für therapeutische hyperbare Kammern.

Es kostete viele Bemühungen um das ECGP für HBO kompatibel zum neuen Projekt des europäischen Normen prEN 14931 «Pressure vessels for human occupancy (PVHO) - Multiplace pressure chamber system for hyperbaric therapy - Performance, safety requirements and testing» zu machen, welche durch die CEN/BT/TF 127 vorbereitet worden ist. Beide Gruppen (CEN/BT/TF 127 und Arbeitsgruppe "Sicherheit" der

COST B14) kooperieren weitgehend auf dem Gebiet der Sicherheit des Verwendens der hyperbaren Kammern als medizinische Vorrichtungen und beide Dokumente enthalten viele Querverweise.  
Vorbereitet durch die Arbeitsgruppe „Sicherheit“ und von allen Mitgliedern der COST B14 validiert, stellt das ECGP für HBO eine harmonisierte europäische Ansicht zur Sicherheit in therapeutischen hyperbaren Kammern dar. Es kann als Bezugsdokument in europäischen Ländern für Richtlinien, Regelungen und Standards in der hyperbaren Medizin verwendet werden.

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### **Un code européen de bonne pratique de l'oxygénothérapie hyperbare**

J. Kot, J. Desola, A. Gata Simao, R. Gough-Allen, R. Houtman, J.L. Meliet, F. Galland, C. Mortensen, P. Mueller, S. Sipinen. COST B14 action «Hyperbaric Oxygen Therapy» WG «Safety»

Traduit de l'anglais par Robert HOUMAN

En 2001, le groupe de travail (WG) "Safety" (sécurité) a été créé à l'intérieur du projet européen COST Action B14 «Hyperbaric Oxygen Therapy» avec pour objectifs principaux l'élaboration de recommandations relatives à la bonne pratique de l'oxygénothérapie hyperbare (HBO) et le suivi du processus européen de normalisation des chambres hyperbares.

Durant les trois années de préparation du code de bonne pratique (ECGP) pour l'HBO, tous les documents révélants relatifs aux sécurités des chambres hyperbares de chaque pays d'Europe ont été étudiés. Le document primaire provenait du BHA «Health and Safety for Therapeutic Hyperbaric Facilities: A Code of Practice» (2000), (Grande Bretagne) et par après, il a été modifié par l'intégration des législations et normes nationales (de Belgique, Finlande, France, Allemagne, Grèce, Italie, Portugal et Espagne), ainsi que des normes européennes, expériences d'experts hyperbares, associations professionnelles et scientifiques. Le code (ECGP) HBO est constitué de chapitres consacrés aux personnels (inclus les responsabilités, les compétences et les formations, équipe minimum durant un traitement hyperbare, aptitude et surveillance médicale), les équipements, les alimentations en gaz, la gestion des risques et les procédures (inclus les procédures standards et d'urgences, la maintenance, les enregistrements de données et la sécurité des patients).

Le code (ECGP) HBO inclu aussi les documents suivants, ECHM Educational and Training Standards for the Staff of Hyperbaric Centres (1997), ECHM Recommendation for Safety in Multiplace Medical Hyperbaric Chambers (1998), de même que le document COST B14 Working Group «Technical Aspects» Final Report (2001) qui intègre une analyse de risques spécifiques aux centres hyperbares thérapeutiques.

Un effort particulier a été porté à rendre le code (ECGP) HBO compatible avec le projet de norme européenne prEN 14931 «Pressure Vessels for Human Occupancy (PVHO) – Multiplace pressure chamber system for hyperbaric therapy – Performance, safety requirements and testing», qui a été préparée dans le même temps par le groupe de travail CEN/BT/TF 127. Les deux groupes de travail (CEN/BT/TF 127 et COST B14 WG «Safety») ont coopérés sur de nombreux sujets relatifs aux aspects de la sécurité des chambres hyperbares et des appareils médicaux et les versions finales de chaque groupe ont de nombreuses références communes.

Préparé par le groupe de travail international "Safety" et après acceptation par tous les membres du COST B14 action, le code (ECGP) HBO est un document européen de consensus sur la sécurité dans les centres hyperbares thérapeutiques et peut être utilisé comme une référence par les pays européens en tant que code, décret ou loi et norme en médecine hyperbare.

Note de l'éditeur: le document "The European Code for Good Practice for Hyperbaric Oxygen Therapy" est disponible sur le site: [www.oxynet.org](http://www.oxynet.org)

#### Commentaires:

Dire que ce document est important serait mentir, en fait il est extrêmement important.

Néanmoins, n'y cherchez pas toutes les réponses à toutes les questions. Ce document pose les bases sur lesquelles nous devons encore travailler.

La version française du code sera disponible fin 2004.

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## UN CODICE PER UNA BUONA PRATICA DELL'OSSIGENO TERAPIA IPERBARICA

J. Kot, J. Desola, A.Gata Simao, Gough-Allen, R. Houman, J.L. Meliet, F. Galland, C. Mortensen, P. Mueller, S. Sipinen. Azione COST B14 "Ossigeno Terapia Iperbarica" Gruppo di Lavoro (WG) "Sicurezza"

Mme Valeria Campanaro,

Nel 2001 fu costituito il Gruppo di Lavoro (WG) "Sicurezza" nell'ambito del progetto AZIONE COST B14 "Ossigeno Terapia Iperbarica", che si proponeva quali principali obiettivi di elaborare suggerimenti di una buona pratica nella medicina iperbarica e di promuovere un processo di regolamentazione per le camere iperbariche.

Durante i tre anni di preparazione del Codice per una Buona Pratica (ECGP) dell'HBO, i documenti importanti concernenti la sicurezza nelle camere iperbariche sono stati revisionati da ogni Paese Europeo. Il documento iniziale si ispirò al BHA "Salute e Sicurezza per i Centri di Terapia Iperbarica: Un Codice di Buona Pratica" (2000), e più tardi su quel modello sono state adattate le normative nazionali (dal Belgio, Finlandia, Francia, Germania, Grecia, Italia, Portogallo e Spagna) e gli standard alle norme Europee e alle esperienze maturate dagli esperti dei centri iperbarici, le commissioni e le associazioni professionali e scientifiche.

Il ECGP per l'HBO consiste di capitoli dedicati al personale (incluse le responsabilità, le competenze e la formazione, il numero minimo di personale presente durante un trattamento iperbarico, la sorveglianza dello stato di benessere e della salute), all'apparecchiatura, alle scorte di gas, al rischio e alle procedure (inclusi gli standard e le operazioni delle procedure di emergenza, la manutenzione, la raccolta dei riepiloghi e sicurezza dei pazienti).

Incluse anche gli standard ECHM circa la formazione e l'addestramento per il personale dei Centri Iperbarici (1997), le Raccomandazioni ECHM per la Sicurezza nelle Camere Iperbariche Multiposto in ambiente clinico (1998), così come il rapporto finale (2001) del Gruppo di Lavoro Azione COST B14 "Aspetti Tecnici" che include un'analisi del rischio indirizzata specificamente per i Centri di terapia Iperbarica.

Molti sforzi sono stati spesi per realizzare il ECGP per l'HBO in sintonia con il nuovo progetto della Norma Europea prEN14931 "Contenitori a Pressione ad uso umano (PVHO)- Sistema di Camere a Pressione Multiposto per Terapia Iperbarica - Lavoro, requisiti di sicurezza e prove" che sono state preparate allo stesso tempo da CEN/BT/TF 127. I gruppi (CEN/BT/TF 127 e COST B14 WG "Sicurezza") hanno collaborato ampiamente sia per quanto concerne gli aspetti sulla sicurezza e l'uso delle camere iperbariche destinate a scopo clinico, sia nella stesura finale dei documenti che contengono molti riferimenti informativi.

Il ECGP per l'HBO è stato preparato dal Gruppo di Lavoro internazionale "Sicurezza" e successivamente è stato accettato da parte di tutti i membri dell'Azione COST B14 e rappresenta un'armonizzata visione Europea sulla Sicurezza nei Centri di Terapia Iperbarica e può essere utilizzata come un documento di riferimento per i Paesi Europei ai fini della definizione di Linee Guida, Normative e Standard nella Medicina Iperbarica.

Nota dell'editore: Il Codice per una Buona Pratica dell'Ossigeno Terapia Iperbarica è disponibile sul sito: [www.oxynet.org](http://www.oxynet.org)

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### General Assembly & Board of Directors of EBAss on 16 September 2004 Ajaccio - France - Resume

#### Agenda

##### *1. Election on the Board of Directors*

Mr. Neiryndck, president of the Safety Committee, is elected as member of the Board of Directors.

##### *2. Program of exchanges of personnel*

The Board of Directors informs the members that they have decided to initiate a program of exchanges of personnel, who are members of EBAss, between facilities. Members interested are invited to contact the General Secretary (Miss Mannens, Cosette)

##### *3. Costs for postage*

It appears the necessity to request contribution to the costs for the postage (10 euros per year). This is ONLY for the members who will not receive the Newsletter by E Mails.

##### *4. Fees for commercial companies and hyperbaric facilities and discount*

We have decided on an adoption of fees for commercial companies and hyperbaric facilities joining as associate members. This will be 200 euros per year for each of these categories of members. The staff members of the hyperbaric facilities, who are also associate members, will receive a discount on their membership of 10 euros per year.

##### 5. Consensus Conference on Hyperbaric Medicine in Lille

Mr. Schwarz, Armin will present the point of view of EBAss on the Consensus Conference on Hyperbaric Medicine in Lille (December 2004).

We strongly encourage all members to come on this conference (Lille - France - 3 / 4 December 2004).

Website: <http://www.santexcel.com/hyperbarie2004>

##### 6. EUBS congres

The Executive Board of EUBS has approved the systematic inclusion of an EBAss session in each future EUBS meeting, presided by an EBAss member, as well a reduced registration fee (50%) for the EUBS meeting for EBAss members.

The next EUBS meeting held in Barcelona (Spain) on 7 - 10 September 2005. Information on [www.barcelona-2005.com](http://www.barcelona-2005.com)

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### The safety zone by Neiryck, Yoerik

For the first time we are introducing our Safety-zone. From this day forward you will find this segment in every edition of EBAss News. It will be used to keep you posted on facts, developments, studies and other safety-related issues.

The Ajaccio accident shows us that, even if all safety measures are taken inside the facility, there can be incidents and accidents provoked by uncontrollable, external elements such as animals, weather and people passing by. So it is of extreme importance that in addition to all "classic" safety measures, we protect our facilities to all kinds of external threats, from the intake at the compressors to the outlet of all used gasses.

Below, you will find the summaries of some articles, all are safety related and of some importance.

"Health outcome of hyperbaric-chamber inside attendants following compressed-air exposure and oxygen decompression" by David J Doolette, Stephen J Goble and Christy J Pirone. Published in South Pacific Underwater Medicine Society (SPUMS) Journal Volume 34 No. 2 June 2004.

It shows that, despite a minute incidence of DCS symptoms, an attendant's health status is not adversely affected by the standard hyperbaric exposures at the Royal Adelaide Hospital. The figures suggest the incidence of DCS in attendants may be higher than general accepted. An under-reporting is likely. Data collection is being extended to other hyperbaric facilities.

"Effect of oxygen flow on inspired oxygen and carbon dioxide concentrations and patient comfort in the Amron™ oxygen hood" by Gretel Davidson and Michael H Bennet. Published in South Pacific Underwater Medicine Society (SPUMS) Journal Volume 34 No. 2 June 2004.

The study confirms their clinical impression that a flow rate of 30 l/min into the Amron™ hood provides adequate inspired oxygen concentration, with minimal accumulation and rebreathing of carbon dioxide. In addition, temperature and noise levels within the hood are maintained at reasonable comfort levels.

In OFFGASSING No. 39, June 2004, Pip Rice published the essay "Discuss the mechanisms, prevention and management of oxygen toxicity in hyperbaric patients".

This essay will define oxygen toxicity, briefly outline the history of oxygen toxicity and state the mechanisms. The discussion will encompass signs, symptoms and prevention of each type. The preventive measures common to all three types and the importance to the nurse will be addressed at length.

If anyone of our members wants more detailed information, please feel free to get in touch.

Any contribution to this segment will be gratefully received.

That's it for the Safety-zone this time around and don't forget, think safety in everything we do, on the job, the road and the private life.

Web links:

Hyperbaric Technicians and Nurses Association :

<http://www.htna.com.au>

South Pacific Underwater Medicine Society

<http://www.spums.org.au/>

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## Fire Fighting Course in Hyperbaric Environment

ACHOBEL recruit for the next Fire Fighting Course in Hyperbaric environment (April 2005) : courageous man/ woman who will test (in vivo) the survey in fire under hyperbaric conditions

More informations by : Robert Houman on [Robhouman@yahoo.fr](mailto:Robhouman@yahoo.fr)



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### Instructions for author's

Acceptance of a manuscript is based on originality and quality of the work as well as the clarity of presentation. All manuscripts will be evaluated for significance, soundness, and conformance to journal format by two or more members of the Editorial Board or guest referees.

After manuscripts have been accepted, authors are asked to submit the final version of the paper electronically or on computer diskette.

#### Preparation of Manuscripts

**Title:** A cover sheet which gives the title of the paper, the names and affiliations of the authors; a short title (running head); and the name, address, telephone and fax numbers, and e-mail address (if any) of the corresponding author must accompany the manuscript.

**Text:** Except in unusual situations, the manuscript should be divided into Introduction, Methods, Results, and Discussion. The overriding principles are that the composition is correct and unambiguous, clear, and concise. The active voice is usually preferable to the passive voice. Parallel construction of groups of like items or concepts aids in comprehension. Figures should be uncomplicated and legible. Abbreviations and acronyms should not be overused, should be clearly defined at their first appearance in the abstract and in the text, and should be avoided in the title. Specific items of information should appear only once in the manuscript; there should not be verbatim repetition in the text of material that appears in a table or figure, duplication of data in graphs and tables, or repetition in Discussion of information that appears in Results. All accepted manuscripts are subject to final editing in the Editorial Office to improve readability and to conserve space.

**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.

Example:

Mannens, C., Houman R. - A Hyperbaric Pan-European Technician, Operator and Nurses Association: a necessity ?  
Proceedings of the 28<sup>th</sup> Annual Scientific Meeting of the European Underwater and Baromedical Society. Germonpre P., Balestra C., Eds. Bruges, Belgium. 2002 p 115

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