

# Neurotox News

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2001



**The Scientific Committee on Neurotoxicology and Psychophysiology  
of the International Commission on Occupational Health**

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Dear colleagues and friends,

We're living in a time of rapid changes. Not that we have changed the timing of the NeurotoxNews, since it's late as usual, but priorities are changing in research as well as clinical activities.

In this issue of NeurotoxNews Dr. Krystyna Pawlas, who kindly agreed to act as a regional representative for our committee in Eastern Europe, is reporting on recent changes in Poland. Using Dr. Pawlas words as a starting point, we would like to initiate a discussion on the development of neurobehavioral toxicology in general, and the future directions for the development of our committee activities.

These are of course questions of great importance for all of us in our daily work, and they should really be even more important to our committee. The committee secretary, Roberto Lucchini, is certainly facing these problems in his work with the organization of the 8<sup>th</sup> International Symposium. With little more than a year to go, detailed planning of the program is going on, and choices have to be made between various program proposals.

For me personally, research priorities have been on the agenda for the last five years during the almost continuous reorganization of the Swedish National Institute for Working Life. The NIWL is facing a major budget deficit in combination with heavy political pressure to change research priorities. Present plans include some 50% reduction of the budgets for Toxicology and Risk Assessment, Lung physiology, Dermatology,

and Occupational Hygiene. Following the budget reductions those research groups will be relocated to other research institutions. Thanks to the active support from you and other colleagues from abroad, presently it seems there is hope for me to continue my lines of research. Still, my future affiliation is far from decided as yet, but I will certainly keep you all informed.

According to the ICOH administration in Singapore we are still facing a problem with the membership of our committee. Only 61% of you on the mailing list are ICOH members in good standing. Ten of you have not paid your dues for the last few years, and nine of you, almost 20%, never even were members. For those of you not in good standing with the ICOH this will be the last issue of NeurotoxNews that you receive. We will, however, send you a personal letter to specify how to get your name back on the membership list.

Hoping for continuing collaboration with you all,

**Anders Iregren**



## News from the secretary

As you can see, preparing a new issue of this bulletin is not an easy task and we are pretty late with the distribution of this number. Anyway, I am quite optimistic in keeping this publication with three issues per year.

In this number we have very important contributions from two of our regional secretaries, who kindly responded positively to my solicitation. It is time to keep up the discussion on important aspects of our work in the field of neurobehavior. Therefore, we are waiting for more contributions from "local" perspectives in the next number.

As announced in the last committee meeting in Singapore, the process of more close collaboration with INA is continuing and you will find a contribution in this context from a member of this prestigious association.

The preparation of the 8<sup>th</sup> Symposium in June 2002 is definitely an important activity which is of interest for all of you, and an update of the process is also available in this issue of the bulletin. As time passes by quickly, proposal for the venue of the next 9<sup>th</sup> Symposium should be considered already by those colleagues willing to offer their personal proposals for such an important event. We will give you all the information about formal submission of candidacies in the next issue of NeurotoxNews.

ICOH Vice President Malcolm Harrington is organizing a "Mid term meeting" for all ICOH officials and SC Chairmen and Secretaries, that will be held in Rome in March 2002. During the meeting all the activities of ICOH SC will be presented and discussed, and further collaborations between SC will be particularly encouraged. Hopefully we will be able to inform about possible candidates for our 9<sup>th</sup> Symposium in that occasion.

A lists of telephone and fax numbers, E-mail addresses, and full postal addresses are attached to this issue of the NeurotoxNews. Unfortunately we were forced to delete the names of those members not in good standing with ICOH policy, that I remind you

below. In our committee we have also additional requirements represented by being active or having a strong interest for the field of neurotoxicology/ psychophysiology. On the other hand, we had 4 new application that are currently under the submission procedure of the Committee. For more information about ICOH procedures you can also contact Saadiah Awek, at ICOH Secretariat [icohsg@singnet.com.sg](mailto:icohsg@singnet.com.sg)

Roberto Lucchini

*BYE-LAW 3-Fees (Section 2): "In the event of non payment of fees within the first six months of the triennial period, the defaulting member shall be deemed not to be in good standing (Article 2, section 2 of the Constitution). Members not in good standing at the end of the triennial period shall cease to be members (Article 2, section 5 of the Constitution). Such members can be reinstated under the condition that they pay the fee for the whole current triennium together with any outstanding fees from the previous triennium."*

### ICOH Scientific Committee on Neurotoxicology and Psychophysiology

Chairman:	Anders Iregren
Secretary:	Roberto Lucchini
Regional Secretaries:	
North Africa:	Mahmoud Amr
East Asia:	Shunichi Araki
Eastern Europe:	Krystyna Pawlas
North America:	Philippe Landrigan
Committee composition:	
Europe	13
East Asia	10
USA	4
North Africa	1
Oceania	1
Middle East	1
TOTAL	30

## **The 8th International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health**

The organization of the 8th Symposium is advancing quite smoothly. A call for topics and arguments was addressed to a wide list of scientists composing the scientific advisory panel. We have received a number of various suggestions, that are listed below. This is a first proposal that we want to circulate further between the Committee members in order to receive a large contribution from experts in different areas.

At present, a second announcement is almost ready and will be mailed soon. In this second announcement information about inscription, abstract preparation and hotel reservation will be available.

As a traditional procedure, applications from developing countries will be encouraged for economical support. Each applicant will have to submit documentation demonstrating personal involvement or interest in the field of neurotoxicology and psychophysiology. An important requirement is the presentation of an oral communication or a poster.

All updated information about the conference will be posted in July-August on our web site at [www.unibs.it/medlav](http://www.unibs.it/medlav), where the scientific program will be available, together with useful historical and tourist notes.

One major consideration that come to our mind while planning the scientific mainframe, was the intention to find a common ground for all sessions. We thought about the present situation of occupational and environmental health and the exact role played by neurobehavioral toxicology in this context.

It is well known that prevention activities and technical changes in industry have substantially modified the reality, and this process will continue in the next future. From classical clinical manifestation caused by exposure to "macro" doses, we have gradually passed to a more complex situation, where exposure has not disappeared but has become much more difficult to identify and characterize. From high doses we have now lower exposure doses to substances that have become more

ubiquitous, and with a constantly increasing number of new substances and compounds that are potentially harmful.

Therefore, the role of toxicology is still very important, and particularly neurotoxicology and behavioral toxicology, since the Nervous System is generally more sensitive and able to reveal early effects due to exposure. Therefore, a big effort should be addressed in this area, focusing on future needs in research and prevention.

We would like to start the Symposium with an historical perspective of the last decades that could help us understanding the present situation and the future trends. Hopefully we will succeed in putting together different perspectives and angles, with this common objective.

Roberto Lucchini  
Lorenzo Alessio

### *List of suggested topics by the scientific committee:*

- Neurotoxicants in the developing world
- Neurobehavioral data as a ground for TLV's
- Neurosensory organs
- Biotoxins (Pfiesteria-like organisms, BSE)
- Manganese and MMT
- Inorganic and organic mercury
- Lead in gasoline: North-South differences and implications for neurotoxicology
- Neurotoxic influence in the developing brain
- Banned pesticides and neurotoxicity in the developing world
- Pesticide exposure, psychological symptoms and suicide rate
- Genetic susceptibility in the exposure to neurotoxicants
- Genes, Gene Expression, and Behavior
- Biomarkers of neurotoxicity
- Exposure assessment of neurotoxicants: environmental and biological monitoring
- Subjective symptoms and personality as proneness to report symptoms
- New neurobehavioral testing methodologies
- Neurodegenerative disorders (Parkinson's Disease, Alzheimer's Dementia, Amiotrophic Lateral Sclerosis)
- Need for metanalysis study
- Multivariate analysis to evaluate confounding and modifying factors

## Exposure to neurotoxicants in Eastern countries

According to the rapid economical development, populations of industrial workers have increased in Asian countries. Life standard of people living in these countries have also risen and the growing awareness of human right pushed forward to disclose hidden occupational diseases to the public. These factors enhanced the elevation of the incidence of occupational diseases, but the effort to improve working environment by the government and related personnel have changed the trend, and the incidence of occupational diseases have been decreasing these years. However in these countries, new types of occupational diseases have been emerging according to the influence of the rapid change occurring in industrialized country, and classical poisonings still have been occurring frequently.

In Japan the incidence of occupational diseases in 1999 was 7817 and 229 of them were due to chemicals. Most of cases due to chemicals are thought as acute poisonings. As far as our understanding, there is no report about neurotoxic poisonings depending on new substance except the newly reported cases of liver toxicity by HCFC-123 (***dichloro-trifluoro-ethane***,  $\text{CHCl}_2\text{CF}_3$ ), despite the facts that serious ***sarine*** poisoning cases and numerous ***sick-house syndrome*** cases have been reported in the general environment. Recently the municipal incinerator workers have known to be exposed to relatively high ***dioxins***. The fears have arisen among the workers that the health problem might be appearing but a clinically recognized health problem had not yet been reported. However, the dioxins are lipid soluble substances and might affect nervous system, further investigations are needed for the evaluation.

In Korea, there have been many reports of Parkinson's disease among welders, which are suspected to be ***manganese*** poisoning. Newly reported cases of ***2-bromopropane*** poisoning, which suppresses bone marrow and has toxicity to reproduction system, were also noticed. This substance has character of organic solvent and has been suspected to have neurotoxicity, but neuronal deficit have not been reported until now.

In China typical poisonings due to exposure to chemicals have been decreasing, but certain amount of cases still occurs. For example, in the Shanxi Province (population about 40,000,000) newly appeared cases of occupational disease were 2343 in 1988 and decreased to 398 in 1997. Since the rapid development of foreign enterprises in economical developing zones of Guangdong, Shanghai etc., occupational poisoning became a significant issue, since there is a lack of regulation on occupational disease prevention for these enterprises. According to the Guangdong province's gross statistics of the half part of year 2000, the total occupational poisoning accidents were 49, among them, 164 people were affected and 5 people died. The exposure to ***organic solvent*** covered the 91% of occupational poisonings. The most significant poisoning included hepatic and dermatotoxicity from ***trichloroethylene***, neurotoxicity from ***n-hexane***. The consumption of n-hexane greatly increased since 1994 with the rapid expansion of foreign enterprises to these areas. The neurotoxicity had well been recognized at the end of 1960's in Japan. However in China, the outbreak of polyneuropathy in the worker exposed to n-hexane was first reported in 1994, and still remains the main part of the occupational poisoning. Due to prohibition of the use of ozone-depleting solvent, ***1-bromopropane*** is being used as the main solvent for cleaning. The amount of 1-bromopropane exported is increasing yearly. Several evidences have already been reported that 1-bromopropane is neurotoxicant.

Shunichi Araki

## Neurotoxic exposure in Poland/Upper Silesia

Yearly ca 300 new cases of occupational diseases due to all chemicals are registered in Poland. It is less than 3% of all occupational diseases newly registered. Only a part of them is a result of exposure to neurotoxicants, but statistics don't show it. The main task of occupational health services is medical periodic examination of workers exposed to neurotoxicants with special emphasis on nervous system. Research work concerning health effects of low occupational exposure to neurotoxicants are provided very seldom. This statement is based on available polish literature and other database.

Currently two institutes of occupational medicine in Sosnowiec and Lodz are providing researches focused on ototoxicity of organic solvents in occupational environment.

Nowadays neurotoxicants in environment are the main problem. Monitoring of environment includes measurements of some neurotoxicants. The most frequents are heavy metals in air and water and soil, organic solvents (mainly: benzene, toluene and xylene) in air and water, pesticides in water and soil.

Investigations of health effects of neurotoxicants in environment are limited to lead. It is still the main problem. There are two area highly contaminated by lead, Upper and Lower Silesia, both located in south of Poland. The sources of lead are foundries and road transport. Children are examined group. Since years emission of lead and lead concentration in air have been decreasing indeed but there are children with blood lead level higher than 10µg/dl (level recommended by CDC) still now. The occurrence of PbB above 10µg/dl is 12-13% and the occurrence of PbB above 15µg/dl is 3- 4 %. Programme of monitoring of blood lead level in children is provided continuously in both area. Children with high blood lead level are included in medical preventive programs.

Besides research work focus on investigation of effects of environmental lead exposure on children's hearing and balance, including some neurological test ( EEG and brain mapping) is providing by the Institute of Occupational and Environmental Health in Sosnowiec. Results of this research will be presented at the end of 2001.

**Krystyna Pawlas**  
Institute of Occupational Medicine  
and Environmental Health  
Sosnowiec, Poland

## Collaboration between INA and the ICOH SC

A cursory glance at the International Neurotoxicology Association (INA) and the ICOH SC on Neurotoxicology and Psychophysiology reveals that both share multiple common attributes. Both are non-governmental professional societies fostering scientific progress, knowledge and development of occupational health and safety. Both advocate: (1) applications of methods for the assessment of early neurotoxic effects due to low exposure doses, (2) design of follow up studies as major epidemiological tool for the evaluation of health effects over time, (3) assessment of factors that are unrelated to exposure and interpretation of the possible interactions, especially with age and sex, as well as (4) verification of validation methods, standardization and basic research on the mechanism of neurotoxicity. Finally, (5) both organizations represent the professional interests of its members, and their meetings allow members to foster exchange of the results of neurotoxicological research, standards, and practices in a collegial atmosphere.

The shared interests by INA and ICOH members are exemplified by a joint symposium on the health effects of manganese that will be staged at INA-8 in Estoril Portugal (June 17-21, 2001). Symposium participants will detail recent studies that characterize occupational health risks associated with manganese exposure, emphasizing contemporary strides in this research area, as well as the important biological questions that have yet to be resolved. The INA-8 symposium will hopefully draw attention to the inherent difficulties in assessing with precision the potential adverse effects of manganese, which is ultimately measured as the risk of possible damage to humans and their environment. It will hopefully also set the stage for future collaborations between INA and ICOH, both in staging joint symposia, as well as in fostering new collaborative relations between members of both associations.

I am confident that as leaders of the neurotoxicology community will join at the 8th International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health, June 23-26, 2002, Brescia, Italy, they will continue to develop the collaborative efforts between the two associations. A proposed joint symposium entitled "Confronting Neurotoxicology: Genes, Gene Expression, and Behavior" could be planned, spotlighting the extraordinary results research has delivered over the past years and highlight the promise of discovery in future years.

**Michael Aschner**  
Dept of Pharmacology & Physiology  
Bowman Gray School of Medicine  
Winston-Salem NC, USA

# International Meetings

## **World Occupational Exposure Values Symposium**

International Cooperation on Scientific and Technical issues

3-5 November 2001  
Brussels, Belgium

The Mission of the Symposium is to bring together those with an interest in the scientific basis for occupational exposure limit values; to address common themes relating to their development; to spread awareness of the work being carried forward; and to establish ongoing networks of interested parties. The symposium will also bring occupational exposure limit setting bodies together to achieve international cooperation on these scientific and technical issues.

The event will be administered by ACGIH Worldwide. All correspondence and inquiries should be directed to:

ACGIH Worldwide  
1330 Kemper Meadow Dr.  
Cincinnati, Ohio 45240, U.S.A.  
Telephone: +1 513 742 2020  
Fax: +1 513 742 3355  
E-mail: [meetings@acgih.org](mailto:meetings@acgih.org)  
Web: <http://www.acgih.org>

## **The Eight Meeting of the International Neurotoxicology Association**

Estoril, Portugal  
June 17-22, 2001

INA8 is organized by

Dr. Maria Camila Cantgiro Batoréu  
E-mail: [mccbatoréu@ff.ul.pt](mailto:mccbatoréu@ff.ul.pt)  
Dr. Anna Paula Marreilha dos Santos  
E-mail: [apsantos@ff.ul.pt](mailto:apsantos@ff.ul.pt)

who can provide further information.

## **Conference on Occupational Health and Public Health**

September 6-9, 2001, Norrköping, Sweden

Themes/sessions:

Socially constructed illnesses and diseases  
Changing concepts of health  
Risk, setting standards and quality management  
Regulations and responsibilities  
Cross-cultural development  
The impact of structures of production and industrial relations on work environment and health  
Health in the information era  
Roots of occupational and public health  
Education and public information  
Science and health protection  
Changes in the social distribution of health

More information is available at  
[www.tema.liu.se/ohph](http://www.tema.liu.se/ohph)

and by E-mail  
[ohphinfo@tema.liu.se](mailto:ohphinfo@tema.liu.se)

## **X2001 – Exposure Assessment in Epidemiology and Practice**

June 10-13, Göteborg, Sweden

Major topics:

Chemical factors  
Ergonomic factors  
Psychosocial factors  
Physical factors  
Biological factors

More information is available at  
[www.ymk.gu.se](http://www.ymk.gu.se)

and by E-mail  
[X2001@ymk.gu.se](mailto:X2001@ymk.gu.se)

## **17<sup>th</sup> Asian conference on Occupational Health**

November 1-4, 2002, Taipei, Taiwan

### Major topics:

Air pollution	Health promotion
Cancer	Law & compensation
Climate change	Musculoskeletal disorders
Dermatosis	Neurologica disorders
Epidemiology	Radiation
Ergonomics	Reproductive hazards
Stress	Exposure & Risk
Semi-conductor	assessment
Industry	Gene-environment interaction

More information is available at

[www.acoh2002.org.tw](http://www.acoh2002.org.tw)

and by E-mail

[acoh2002@seed.net.tw](mailto:acoh2002@seed.net.tw)

## **XVI<sup>th</sup> World Congress on Safety and Health at Work**

26-31 May, 2002, Vienna, Austria

### Congress themes:

**A** New technologies, New Patterns of Work Organization – New Challenges for Health at Work  
**B** Methods, Procedures and Instruments of Prevention  
**C** Institutional and Political Aspects of Prevention  
**D** Prevention in Small and Medium-Sized Enterprises  
**E** Prevention in Developing Countries

More information is available at

[www.safety2002.at](http://www.safety2002.at)

and by E-mail

[safety2002@auva.sozvers.at](mailto:safety2002@auva.sozvers.at)

## ◆ The newsletter

This newsletter is compiled quarterly by

Roberto Lucchini, MD  
Institute of Occupational Health  
University of Brescia  
P.le Spedali Civili 125125 Brescia, ITALY  
Fax: +39030 3996-080  
Tel: +39030 3995-735

Contributions to the newsletter are most welcome, preferably as text files via E-mail, or on diskette by ordinary mail. Preferred file format is plain text or MSWord. The newsletter layout is now produced using MSWord.

Feel free to contact me when you have any questions or suggestions related to contributions and/or the contents of this newsletter!