



NEWSLETTER

Change of Secretariat

Immediately before the last Medichem Conference and Board meeting our Secretary Georg Wultsch unfortunately had to inform the Medichem Board that he had to relinquish office due to unforeseen health reasons. With no immediate replacement at hand I offered to step in for the time being, well aware that I would not be able to continue for a longer period. Thus, at the recent General Assembly in Amsterdam the Board issued a call to the membership to step up for the office of Secretary. I am happy to report that two very able candidates volunteered, leaving the Board with a difficult decision. In the end it was decided to co-opt Diane Mundt from U.S.A. as new Board member and Secretary. Our warmest thanks go to both candidates, and our best wishes to Diane for this tedious, challenging and nevertheless extremely thrilling and rewarding task (I know what I am talking about). She can of course always count on the support of her Board colleagues, and I trust that you Medichem members will do your best likewise. Our very best wishes go to Georg Wultsch who we hope will fully recover and remain with us for many more years.

Dr. Michael Nasterlack
(Ludwigshafen, Germany)



Introduction of the new secretary

Dr. Diane J. Mundt is a Senior Manager for ENVIRON International Corporation with over 20 years of experience in the application of epidemiological methods in the areas of occupational and environmental health, specializing in research and policy applications. She has particular expertise in the systematic evaluation of health effects of chemical compounds and an extensive background in the critical review and interpretation of epidemiological studies. Her recent professional experience includes heading ENVIRON's Nanotechnology team of experts on epidemiology, toxicology, industrial hygiene, and environmental fate and transport of nanomaterials; membership on the Industry Advisory Board to Northeastern University Collaborative Nanoscale Science & Engineering Center for High Rate Nanomanufacturing; providing technical and editorial oversight of reviews of the epidemiological literature for various chemical compounds, including dioxin; overseeing and managing an epidemiological study of possible occupational exposure to a perfluorinated compound; and directing historical reviews of the asphalt roofing, refining, paving industry sectors.

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November 2008



MEDICHEM - Occupational and Environmental Health in the Production and Use of Chemicals

Founded 1972 in Ludwigshafen, Germany

Honorary President:
Prof. Dr. med. Dr. h. c.
Alfred M. Thiess

Chairman:

Dr. Thirumalai Rajgopal
Hindustan Lever Limited
Hindustan Lever House
165/166 Backbay Reclamation
Mumbai - 400 020 (India)
Phone: +91-22-2285 55 83
Fax: +91-22- 2281 91 97

Secretary:

Dr. Diane Mundt
ENVIRON Health Sciences Institute
28 Amity Street, Suite 2A
01002 Amherst (U.S.A.)
Tel.: +1-413-256-3556
Fax: +1-413-256-3503

Treasurer:

Dr. Andreas Flückiger
F.Hoffmann-La Roche Ltd.
CH-4070 Basel (Switzerland)
Phone:+41-61-688 37 38
Fax: +41-61-688 16 51

Board Members:

Dr. P.J. Boogaard (Netherlands)
Prof. S. Borron (USA)
Dr. A. Combrinck (South Africa)
Prof. E.-N. Emmanouil-Nikoloussi (Greece)
Dr. J. Ger (Taiwan)
Prof. J. Godnic-Cvar (Austria)
Prof. K. Kono (Japan)
Dr. J.A. Morales (Mexico)
Dr. M. Nasterlack (Germany)
Dr. A.B. Onn (Malaysia)
Prof. T. Popov (Bulgaria)
Dr. F.G. Rose (U.K.)
Dr. S. Shanbhag (India)
Dr. E. Whiteside (New Zealand)
Dr. A. Wiener (Israel)

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Prior to joining ENVIRON, Dr. Mundt served as Director of Public Health Policy for Applied Epidemiology, Inc. She has also managed and provided scientific input to numerous US National Academies committees, and has served on the faculties at Georgetown University, Washington, DC and the University of Chicago, Chicago, Illinois. She began her career as an epidemiologist in the Environmental Epidemiology Branch of the US National Cancer Institute. Dr. Mundt received her Master of Science degree from Harvard University, School of Public Health and her doctorate in epidemiology from the University of Massachusetts.

Dr. Michael Nasterlack
(Ludwigshafen, Germany)
Dr. Diane Mundt
(Amherst, U.S.A.)



Minutes of the Medichem General Assembly September 10th, 2008, Amsterdam

TOP 1: Welcome to participants and guests

Present: 36 members in good standing.

Because Chairman T. Rajgopal had to leave the conference early on urgent matters,

Michael Nasterlack opened the meeting at 10:15 h.

TOP 2: Approval of the minutes of the last General Assembly

The minutes had been distributed to the membership via the November 2007 Newsletter. They were approved as written.

TOP 3: Approval/ addition/ changes of agenda

There were no changes to the agenda.

TOP 4: Officers' reports

Chairman's report

Michael Nasterlack presented the Chairman's report. In brief, he reported on the Mini-Symposium held in Mumbai, with more than one hundred participating health and safety engineers mainly from small and medium industries. The symposium had been jointly organized with the Indian Association of Occupational Health and the Directorate of Industrial Safety and Health, India.

Treasurer's report

Andreas Flückiger reported that with expenditures amounting to CHF 29,832.25 and revenues of CHF 32,508.16, the year 2007 ended with an increase of Medichem's assets of CHF 2,675.91. Therefore the credit balance on December 31st, 2007 was CHF 295,962.10

(USD 260,759.55). AF reported that the books were revised by Walter Urbatus in March 2008 and found to be in good order. The present members unanimously accepted the report as presented.

Secretary's report

Prior to the conference Georg Wultsch had informed the Board that due to unforeseen health problems he was unable to further perform the tasks of Secretary. The present Medichem members expressed their sympathy and best wishes for Georg. Michael Nasterlack had volunteered to step in as an interim solution. On behalf of the Board he forwarded a call to the general membership to volunteer for the office of Secretary.

TOP 5: Results from the 2008 Board election

The following Medichem members had been nominated to the Secretary and consented to stand as Board candidates: Stephen Borron and Kevin Trangle (both USA), Peter Boogaard (The Netherlands), Adriaan Combrinck (South Africa), Elpida Emmanouil-Nikoloussi (Greece), Jiin Ger (Taiwan), Jorge Morales (Mexico), Abed bin Onn (Malaysia), and Edwin Whiteside (New Zealand). Les Yee and Frank Rose, after having served on the Board for three and two terms, respectively, had decided not to run for another term. Since up to eight vacancies on the

Medichem Board were to be filled, there were candidates from as many countries as there were vacancies on the Board, and thus most of this year's election went with a "silent vote". The decision between Stephen Borron and Kevin Trangle went in favour for Stephen who will therefore serve on the Board for another three year period.

The Medichem Board gratefully acknowledges the outstanding service Les Yee and Frank Rose have provided to Medichem in the past and conveys our sincere thanks and best wishes for the future. The Board also thanks Kevin Trangle for his willingness to support Medichem as demonstrated by his candidacy.

TOP 6: Upcoming congresses (ICOH Cape Town, Taipei)

a) ICOH Cape Town 2009:

The congress will take place from March 23rd to 27th, 2009. Medichem has been assigned a 90 minute slot for a minisymposium. This is listed as S15 - Chemicals – "New Occupational and Environmental Health Challenges and Solutions". Speakers for the symposium have yet to be identified.

b) Taipei 2010:

Jiin Ger from Taipeh presented the outline for the XXXVIII Medichem congress to be held from 22nd to 24th April, 2010 as a joint meeting with EPICOH. It will be organized

by the Institute of Occupational Medicine and Industrial Hygiene, the National Taiwan University College of Public Health and Taiwan Environmental and Occupational Medicine Association in collaboration with the International Commission of Occupational Health (ICOH) and its Scientific Committee on Epidemiology in Occupational Health and the Scientific Committee on Reproductive Hazards in the Workplace. Conference theme will be "Occupational Health under Globalization and New Technology".

TOP 7: Review of current Medichem programmes and initiatives

Andreas Flückiger points out that the different award schemes provided by Medichem have led to a bit of confusion.

The "Medichem Prize" is awarded during a Medichem congress. It is open to trainees in the fields of Occupational Medicine, Occupational Health (including Occupational Health Nursing), Occupational and Environmental Hygiene, and Occupational Safety. Only residents of the country where the congress is being held are eligible
"Medichem Scholarships" are offered based on merit to individuals to present scientific papers at Medichem's Congresses. Scholarships are available to Medichem members and non-members

alike, regardless of their residence.

The "Medichem International Young Professionals Award" is only available to applicants younger than 35 wishing to present their work at congress. It is intended to attract to Medichem young non-members in training as an occupational health professional. Experienced Medichem members act as tutors for these young professionals and help them with preparing their presentations.

The "Medichem National Occupational Health Association Award" has been introduced to sponsor a speaker at a national congress, other than the Medichem congress. This speaker will be formally speaking on behalf of Medichem. A proposal for 3 such speakers will have to be made to the Medichem Chairman and Medichem has the right to decide which of the 3 will receive the award.

The prize schemes will be newly promoted and put on the website. Congress organizers will have to make sure that respective applicable criteria for participation are kept strictly.

TOP 8: AOB

Fred Thiess, Founder and Honorary President of Medichem, expressed his warm thanks to Peter Boogaard and his staff for preparing and organizing this excellent 2008 Medichem Congress, as well as to the

Medichem Board for all the work done in the past and at present. He specifically recalled Bert de Boer, Medichem's first Secretary, and emphasized his role in the founding of our society.

The next General Assembly will take place in Cape Town during the ICOH congress. The exact date and venue remains to be determined. It will be communicated via Medichem's website and along with the formal invitation.

Michael Nasterlack adjourned the meeting at 16.00 h

Dr. Michael Nasterlack
(Ludwigshafen, Germany)



In this Newsletter, we have occasionally reported on health issues associated with or attributed to electromagnetic field (EMF) exposures. While this topic is not exactly chemicals-related, it may nevertheless be very relevant in the daily work of many of us who are confronted with questions and concerns from employees, sometimes forwarding concrete proposals for solutions for a perceived problem. A few months ago the American Journal of Industrial Medicine published a study on what appeared to be an excess of cancers in a comparatively small group of teachers in a California school. As the suspected cause high frequency voltage transients ("dirty electricity") were identified.

This is the abstract of the article:

A new electromagnetic exposure metric: high frequency voltage transients associated with increased cancer incidence in teachers in a California school

(S. Milham, L.L. Morgan (2008) Am. J. Ind. Med. 51: 579-586)

BACKGROUND: In 2003 the teachers at La Quinta, California middle school complained that they had more cancers than would be expected. A consultant for the school district denied that there was a problem.

OBJECTIVES: To investigate the cancer incidence in the teachers, and its cause.

METHOD: We conducted a retrospective study of cancer incidence in the teachers' cohort in relationship to the school's electrical environment.

RESULTS: Sixteen school teachers in a cohort of 137 teachers hired in 1988 through 2005 were diagnosed with 18 cancers. The observed to expected (O/E) risk ratio for all cancers was 2.78 ($P = 0.000098$), while the O/E risk ratio for malignant melanoma was 9.8 ($P = 0.0008$). Thyroid cancer had a risk ratio of 13.3 ($P = 0.0098$), and uterine cancer had a risk ratio of 9.2 ($P = 0.019$). Sixty Hertz magnetic fields showed no association with cancer incidence. A new exposure metric, high frequency voltage transients, did show a positive

correlation to cancer incidence. A cohort cancer incidence analysis of the teacher population showed a positive trend ($P = 7.1 \times 10^{-10}$) of increasing cancer risk with increasing cumulative exposure to high frequency voltage transients on the classroom's electrical wiring measured with a Graham/Stetzer (G/S) meter. The attributable risk of cancer associated with this exposure was 64%. A single year of employment at this school increased a teacher's cancer risk by 21%.

CONCLUSION: The cancer incidence in the teachers at this school is unusually high and is strongly associated with high frequency voltage transients, which may be a universal carcinogen, similar to ionizing radiation.

As I had previously been unaware of this aspect in the EMF debate I tried to get more in-depth information via the internet. The search mostly yielded commercials advertising so-called Graham-Stetzer Filters as a solution to a host of health problems including "electric hypersensitivity", multiple sclerosis and diabetes. I also found one critical appraisal of some of the technical claims made by the distributors of these filters, issued by the Consumer and Clinical Radiation Protection Bureau Health Canada

(G. Gajda, A. Thansandote, E. Lemay, D. Lecuyer, W. Gorman, J. McNamee, 2006).

able to shed more light on this question.

Occupational exposure to solvents and gasoline and risk of cancers in the urinary tract among Finnish workers

(J. Lohi, P. Kyyrönen, T. Kauppinen, V. Kujala, E. Pukkala: *Am. J. Ind. Med.* (2008) 51: 668-672)

BACKGROUND: Bladder cancer (BC) is generally considered as an occupational disease, and some chemical exposures may also be associated with renal cell cancer (RCC). The aim of this study was to estimate the risk of cancers of the urinary tract in relation to occupational exposure to solvents and gasoline.

METHODS: A cross-sectional cohort of all economically active Finns from the 1970 population census was followed up for BC (10,277 cases) and RCC (9,954 cases). Census occupations were assigned estimates of exposure to hydrocarbon (HC) solvents and gasoline with a job exposure matrix. Relative risk (RR) estimates were defined using Poisson regression models, adjusted for smoking and obesity.

RESULTS: Exposure to solvents was positively associated with the incidence of BC in women but not in men. The RR estimates were above 1.2 in nearly all exposure categories of all exposures studied but a statistically significant excess

was only seen for middle levels of chlorinated HC solvents (1.7; 95% CI = 1.2-2.5) and a low level of aromatic HC solvents (1.6; 95% CI = 1.3-2.1). The RR estimates for RCC were close to unity in all categories of exposure.

CONCLUSIONS: Our findings suggest that occupational exposure to certain solvents may have an impact on BC risk. The risk of RCC does not appear to be altered by exposure to HC solvents or gasoline.

Dr. Michael Nasterlack
(Ludwigshafen, Germany)



The lifetime prevalence of cancer is estimated at 1 in 3 in Western countries, and 1 in 4 deaths is attributable to cancer. The perception of this fact is extremely variable both across societies and individuals. While some attribute it to an ever-increasing exposure to environmental carcinogens, others point towards the decreasing role of "traditional" causes of ill health and death in the affluent Western societies, which only then provides room for the development of (more) cancers. However, the search for and identification of relevant and important carcinogens by means of toxicology and epidemiology is an indispensable issue in the fight against avoidable ill health and suffering from cancer. In this context the issue of "false positives" should not be

disregarded: erring "on the safe side" may well produce adverse side effects for a society, not only through lost revenues but also through the loss of beneficial effects of substances dismissed on faulty assumptions. I found two interesting articles dealing with these aspects of uncertainty, one requesting more in-depth toxicological testing, the other cautioning against the premature and alarmist use of epidemiological findings.

The limits of two-year bioassay exposure regimens for identifying chemical carcinogens

(J. Huff, M.F. Jacobson, D.L. Davis: *Environ. Health Perspect.* (2008) 116: 1439-1442)

BACKGROUND: Chemical carcinogenesis bioassays in animals have long been recognized and accepted as valid predictors of potential cancer hazards to humans. Most rodent bioassays begin several weeks after birth and expose animals to chemicals or other substances, including workplace and environmental pollutants, for 2 years. New findings indicate the need to extend the timing and duration of exposures used in the rodent bioassay.

OBJECTIVES: In this Commentary, we propose that the sensitivity of chemical carcinogenesis bio-assays would be enhanced by exposing rodents beginning in utero and continuing for 30 months (130 weeks) or until

their natural deaths at up to about 3 years.

DISCUSSION: Studies of three chemicals of different structures and uses - aspartame, cadmium, and toluene - suggest that exposing experimental animals in utero and continuing exposure for 30 months or until their natural deaths increase the sensitivity of bioassays, avoid false-negative results, and strengthen the value and validity of results for regulatory agencies.

CONCLUSIONS: Government agencies, drug companies, and the chemical industry should conduct and compare the results of 2-year bioassays of known carcinogens or chemicals for which there is equivocal evidence of carcinogenicity with longer-term studies, with and without in utero exposure. If studies longer than 2 years and/or with in utero exposure are found to better identify potential human carcinogens, then regulatory agencies should promptly revise their testing guidelines, which were established in the 1960s and early 1970s. Changing the timing and dosing of the animal bioassay would enhance protection of workers and consumers who are exposed to potentially dangerous workplace or home contaminants, pollutants, drugs, food additives, and other chemicals throughout their lives.

Interestingly, the authors appear to believe that any test, which leads to more positive results than an other should be regarded as "better identifying

potential human carcinogens" - a view that I dare to challenge if it comes to an example like toluene. And while the authors speculate that "Benefits to public health from conducting more sensitive bioassays ... could be considerable" they appear not even to consider the disadvantages resulting from reduced positive predictive value and action taken on false positives.

False-positive results in cancer epidemiology: A plea for epistemological modesty

(P. Bofetta, J.K. McLaughlin, C. La Vecchia, R.E. Tarone, L. Lipworth, W.J. Blot: J. Natl. Cancer Inst. (2008) 100: 988-995)

False-positive results are inherent in the scientific process of testing hypotheses concerning the determinants of cancer and other human illnesses. Although much of what is known about the etiology of human cancers has arisen from well-conducted epidemiological studies, epidemiology has been increasingly criticized for producing findings that are often sensationalized in the media and fail to be upheld in subsequent studies. Herein we describe examples from cancer epidemiology of likely false-positive findings and discuss conditions under which such results may occur. We suggest general guidelines or principles, including the endorse-

ment of editorial policies requiring the prominent listing of study caveats, which may help reduce the reporting of misleading results. Increased epistemological humility regarding findings in epidemiology would go a long way to diminishing the detrimental effects of false-positive results on the allocation of limited research resources, on the advancement of knowledge of the causes and prevention of cancer, and on the scientific reputation of epidemiology and would help to prevent oversimplified interpretations of results by the media and the public.

Dr. Michael Nasterlack
(Ludwigshafen, Germany)



Welcome to new members

Dr. **Jacco Bartels**, Akzo Nobel, Arnhem (Netherlands)

Dr. **Tamara Nameroff**, Shell international Ltd., The Hague (Netherlands)



Forthcoming Events

ICOH Cape Town 2009:

The congress will take place from March 23rd to 27th, 2009. Medichem has been assigned a 90 minute slot for a minisymposium. This is listed as S15 - Chemicals – “New Occupational and Environmental Health Challenges and Solutions”.

Speakers will be:

Andreas Flückiger:

“Guidance for the interpretation of biomonitoring data”

Frank Hoffmeyer:

“Role of exhaled breath analysis in environmental and occupational research”

Michael Nasterlack:

“Evaluation of urine based tumor markers for the early detection of bladder cancer in workers formerly exposed to aromatic amines.”

Stephen Borron:

“The use of population based biomonitoring data in post incident assessment of persons potentially chemically exposed during unintended chemical release.”



XXXVIII Medichem congress, Taipeh 2010

The XXXVIII Medichem congress will be held from 22nd to 24th April, 2010 as a joint meeting with EPICOH. It will be organized by the Institute of Occupational Medicine and Industrial Hygiene, the National Taiwan University College of Public Health and Taiwan Environmental and Occupational Medicine Association in collaboration with the International Commission of Occupational Health (ICOH) and its Scientific Committee on Epidemiology in Occupational Health and the Scientific Committee on Reproductive Hazards in the Workplace. Conference theme will be “Occupational Health under Globalization and New Technology”.

More information will soon be available on the Medichem Website. The second announcement is expected in March 2009.



19th International Symposium on Shiftwork and Working Time

“Health and Well-being in the 24-h Society”, August 2009 - San Servolo Island - Venice, Italy

Organized by: Prof. Giovanni Costa - Department of Occupational and Environmental Health, University of Milano, Italy
Sponsored by: Working Time Society

Co-sponsored by ICOH SC: "Shiftwork and Working Time"

Contact Information:

Mrs. Daniela Fano,
Department of Occupational and Environmental Health,
University of Milano. Via S. Barnaba 8, 20122 Milano, Italy.

