CORPORATE TIES THAT BIND: THE MANIPULATION BY VESTED INTERESTS

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LENNART HARDELL

Maligna mesenkymala tumörer och exposition för fenoxisyror – en klinisk observation

Sju fall med malign mesenkymal tumör iakttagna vid onkologiska kliniken i Umeå åren 1970–76 och med exposition för fenoxisyror 10–20 år tillbaka beskrivs. Expositionen har varit direkt och relativt massiv för fem av fallen. Latenstiden stämmer med den för kemisk karcinogenes antagna. Könsfördelningen i detta material om totalt 87 patienter avviker från den genomsnittliga för riket med manlig dominans. Några säkra slutsatser om ett eventuellt kausalsamband kan givetvis ej dras av dessa fall, utan för detta krävs mer omfattande undersökningar.

Frågan om fenoxisyror (t ex hormoslyr) eller i dessa ingående föroreningar kan utöva skadeeffekter på människa och djur har varit föremål för en omfattande debatt. Någon cancerogenicitet hos människa har hittills ej rapporterats.

I denna artikel beskrivs sju patienter med malign mesenkymal tumör iakttagna vid onkologiska kliniken i Umeå åren 1970–76 och hos vilka exposition för fenoxisyror förelegat 10–20 år före diagnosen av tumörsjukdomen. Dessa fall bevisar naturligtvis inget om ett eventuellt samband mellan sådan exposition och malign tumör – för att bevisa eller utesluta ett sådant samband krävs ingående epidemiologiska undersökningar – men det har ändå ansetts motiverat att rapportera iakttagelserna i kasuistisk form.

Åren 1970–76 har vid onkologiska kliniken i Umeå mottagits sammanlagt 87 patienter med malign mesenkymal tumör. Av dessa var 32 kvinnor (37 proc) och 55 män (63 proc). Av männen har 43 varit yrkesverksamma; yrkesbeteckning saknas dock i ett fall. Nio var skogsarbetare (20,9 proc), fyra arbetade inom jord- och skogsbruk (9,3 proc) och sex vid sågverk eller massaindustri (14,0 proc).

Kasuistik

□ *Fall 1.* 62-årig man, skogsarbetare fram till pensionering 1971 på grund av diarré och smärtor till vänster i buken. Rökare. Vårdad för tbc 1959. För övrigt väsentligen frisk tidigare. I sitt arbete hade han besprutat med fenoxisyran 2,4,5-T knappt en vecka 1963 och 1964, två veckor 1965, en månad 1966, en månad 1967 samt två veckor 1968. Sedan augusti 1976 ökande värk i höger fossa iliaca samt svullnad av höger ben. Vid laparotomi påvisades en tumör i lilla bäckenet adherent till bäckenväggen. PAD: Medelhögt differentierat leiomyosarkom.

□ *Fall 2.* 57-årig skogsarbetare, icke rökare. Hypertoni sedan 1960. Behandlad för postinfektiös artrit 1974. På 1950- och 60-talen under vardera tre eller fyra somrar och varje sommar under tre veckor hade han använt en blandning av 2,4-D och 2,4,5-T för fickning och i mindre utsträckning för ryggbesprutning. Sedan augusti 1976 tillväxande tumör ventralt, proximalt på höger lårben. PAD: Mesenkymal tumör, troligen medelhögt differentierat fibroserande liposarkom.

LENNART HARDELL är underläkare vid onkologiska kliniken, regionsjukhuset, Umeå.

□ *Fall 3.* 49-årig man, verkstadsägare. Mångåriga gastritsymtom men för övrigt frisk. I sin verkstadslokal hade han åren 1961–72 under icke besprutningssäsong, ca 11 månader årligen, förvarat tusentals liter av fenoxisyror för skogsbolags räkning. Förvaringen hade delvis skett i öppna hinkar. Patienten hade även handskats med medlet. Uppgav ständig lukt på arbetsplatsen. Augusti 1976 melena och buksmärtor. I november ånyo akuta buksymtom som föranledde laparotomi. Härvid påvisades tumör i lilla bäckenet med engagemang av rektum, urinblåsa samt överväxt till tunntarm. PAD: Mesenkymal tumör, snarast neurofibrosarkom.

□ *Fall 4.* 60-årig skogsarbetare, måttlighetsrökare. År 1938 appendektomi men för övrigt frisk. Åren 1961–66 hade han ca 20 arbetsdagar per år besprutat med fenoxisyror. Sökte i augusti 1971 för defekationsbesvär. Palpatoriskt i rektum innanför sfinktern submuköst växande tumör. PAD: Sarcoma recti (leiomyosarkom).

□ *Fall 5.* 44-årig man som tidigare varit helt frisk. Åren 1945–46 under vardera tre veckors tid hade han exponerat sig för herbicider under jordbruksarbete i Danmark. Anställd i oljeindustri åren 1954–68. Sommartid åren 1960–68 hade han två veckor årligen handskats »ganska ovarsamt» med fenoxisyror både med spruta och i form av fickning. Sökte 1974 för tilltagande resistens volart höger underarm. PAD: Rabdomyosarkom.

□ *Fall 6.* 76-årig man som varit frisk till 1972 då han opererades för perforerat ulcus ventriculi. Angav viss exponering för fenoxisyror under 4–5 somrar på 50-talet, varvid han slagit och tillvaratagit gräs längs vägrenar som vägverket besprutat. Patienten uppgav dessutom att han arbetat och vistats i skog som besprutats med fenoxisyror. Sökte 1972 för domningar och värk i höger arm. Palpatoriskt påvisades en decimeterlång tumör på insidan av höger överarm. PAD: Myxofibrosarkom med misstänkt lipoblastisk differentiering.

□ *Fall 7.* 67-årig skogsarbetare med tre tidigare pneumonier samt gastritanamnes. Patienten hade arbetat i skogen till 1970. Hyggesrensat enligt egen uppgift från 1956 till början av 60-talet inom fenoxisyrabesprutade områden. Angav arbete i anslutning till besprutning till ett par år senare. Sedan juni 1969 hade han noterat en resistens på vänster underarm. Sökte för denna i mars 1970. PAD: Polymorfcelligt sarkom, möjligen ett rabdomyosarkom.

Utöver dessa sju patienter, hos vilka expositionen för fenoxisyror har varit direkt åtminstone i de fem första fallen, finns ytterligare ett par patienter – bägge skogsarbetare – som haft sina arbetsplatser på 1950–60-talen tidvis förlagda i anslutning till besprutade områden. I det ena fallet har dessutom bärplockning efter besprutning förekommit. PAD: Rabdomyosarkom respektive neurofibrosarkom.

Diskussion

Latenstiden för kemisk induktion av maligna, solida tumörer hos människa anses i allmänhet vara mycket lång och i genomsnitt av storleksordningen 15–30 år. Latenstiden är möjligen dosberoende (Hueper, Konway 1964). I de relaterade fallen ligger exponeringen 10–20 år bakåt i tiden. Kontakten har skett via hud och inandningsorgan.

Några slutsatser om ett eventuellt kausalsamband mellan exposition för fenoxisyror och däri ingående föroreningar samt maligna mesenkymala tumörer kan självfallet ej dras från de relaterade fallen. Expositionen för fenoxisyror torde vara relativt vanlig inom de tre skogslän som utgör Umeå-klinikens upptagningsområde och det kan mycket väl ha varit fråga om ett slumpmässigt sammanträffande.

Vad som dock är anmärkningsvärt och kan motivera fortsatta undersökningar är att det är fråga om en sällsynt tumörtyp, att expositionen i samtliga fall varit ganska massiv, att latenstiden stämmer med den för kemisk karcinogenes antagna samt att könsfördelningen för maligna mesenkymala tumörer vid Umeå-kliniken starkt avviker från den genomsnittliga i

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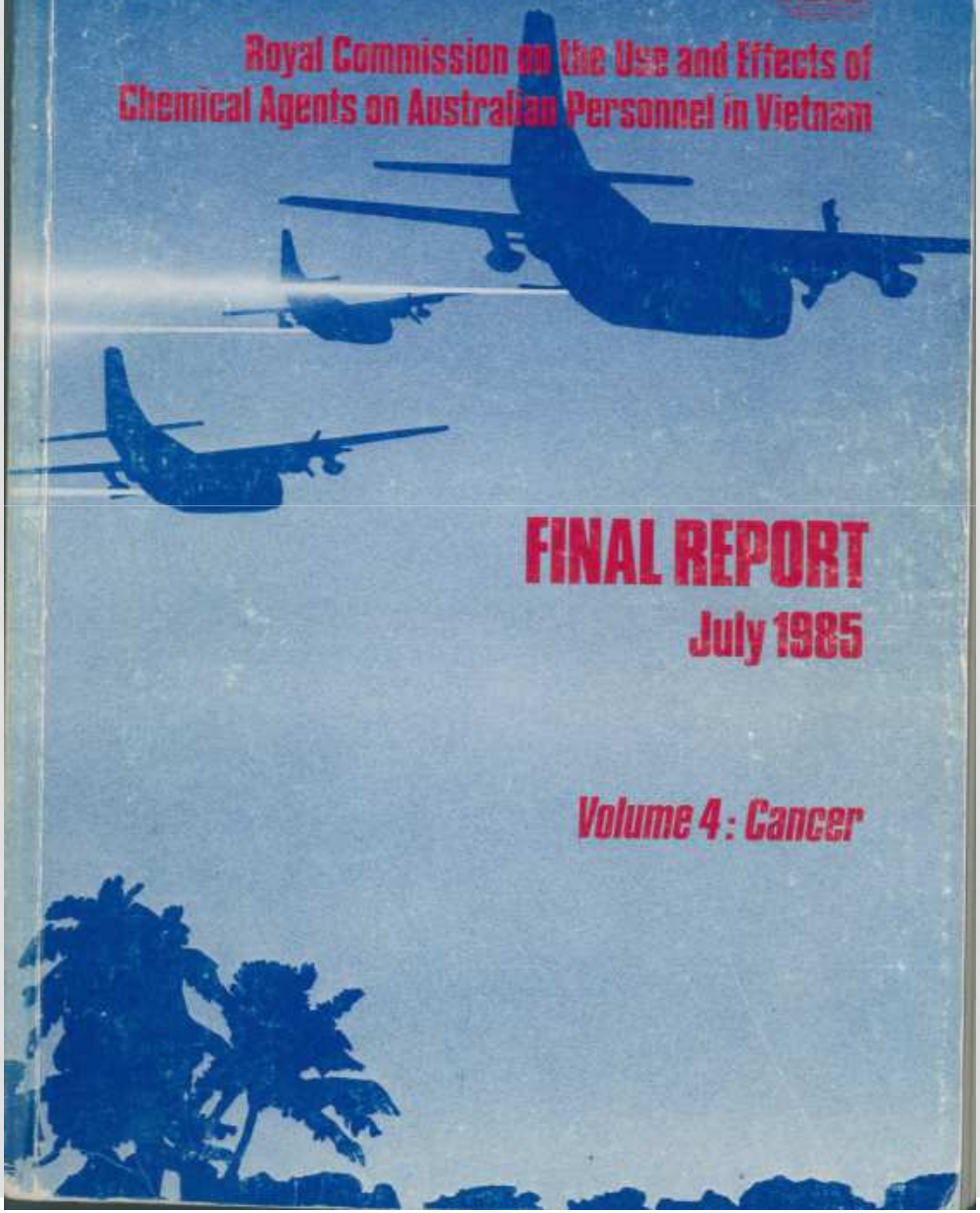
Royal Commission on the Use and Effects of Chemical Agents on Australian Personnel in Vietnam



FINAL REPORT

July 1985

Volume 4 : Cancer

December 4, 1985 40-X-016

Green College
Oxford OX2 6UE
England

The Hon. Mr. Justice Phillip Evatt, DSC, LLB

Dear Mr. Evatt,

I was most interested to see your report on the use and effects of chemical agents on Australian Personnel in Vietnam. I have not yet had an opportunity to read it all, but I have read the volume on cancer, in which I was particularly interested and should like to say how impressed I was by it.

When Hardell and his colleagues first presented their data suggesting that exposure to phenoxy herbicides had given rise to an excess of soft-tissue sarcomas and lymphomas in Sweden, I found their conclusions difficult to accept because the exposures had been, in many cases, so slight and the types of cancer thought to be produced so diverse (both soft tissue sarcomas and lymphomas being terms used to describe broad groups of tumours that would, on general grounds, be expected to have different causes). When, however, it was subsequently reported that four men in small groups of workers who had been exposed to similar chemicals in industry in the USA had developed soft tissue sarcomas, the situation appeared to be altered and the possibility that Hardell's conclusions were correct had to be considered seriously.

Your report not only shows that the servicemen concerned did not have any excess risk of cancer in general or of the two broad types of cancer which, it had been suggested, might be associated with the herbicides used in the Vietnam war, but it also provides convincing evidence that there is no reason to support that the herbicides to which the servicemen could have been exposed (albeit in very small amounts) would have contributed any carcinogenic hazard.

This latter part of your report was, I thought, of outstanding importance for the scientific world. The evidence that you were able to bring together relating to men occupationally exposed to herbicides in Finland, Sweden, New Zealand, and Victoria, many of whom were exposed to much larger amounts than the Swedish workers reported by Hardell, makes it impossible to accept Hardell's work at its face value. The methodology employed in the new Swedish, Finnish and Victorian studies is, as you point out, much less liable to bias than that employed by Hardell, as it consisted in the follow up of men who were known from employment records to have been exposed to the relevant herbicides before their subsequent medical history was discovered. In two of their studies no soft tissue sarcomas or lymphomas were observed, while the larger Victorian study revealed numbers that were almost identical with those expected (1 soft

[Dr. Hardell's] conclusions cannot be sustained and in my opinion, his work should no longer be cited as scientific evidence. It is clear, too, from your review of the published evidence relating to 2,4-D and 2,4,5-T (the phenoxy herbicides in question) that there is no reason to suppose that they are carcinogenic in laboratory animals and that even TCDD (dioxin), which has been postulated to be a dangerous contaminant of the herbicides, is at the most, only weakly and inconsistently carcinogenic in animal experiments.

Monsanto

DEPARTMENT OF MEDICINE & ENVIRONMENTAL HEALTH

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167
Phone: (314) 694-1000

April 29, 1986

Sir Richard Doll
University of Oxford
Clinical Trial Service Unit
Radcliffe Infirmary
Oxford OX2 6 HE
United Kingdom

Dear Sir Richard:

This letter is for the purpose of extending your Consulting Agreement with Monsanto Company dated May 10, 1979. The Consulting Agreement is hereby extended for an additional one year period beginning June 1, 1986 and ending May 31, 1987.

During the one year period of this extension your consulting fee shall be $1500.00 per day. All other terms and conditions of the Consulting Agreement of May 10, 1979 shall remain in effect during this extension period.

If the foregoing meets with your understanding and approval, please so indicate by executing this letter in duplicate and returning one of the signed duplicates to us.

Very truly yours,

MONSANTO COMPANY

By _____
George Roush, Jr., M.D.
Director, Department Medicine
& Environmental Health

ACCEPTED AND AGREED TO:

By _____
Sir Richard Doll

Date _____

Monsanto

DEPARTMENT OF MEDICINE & ENVIRONMENTAL HEALTH

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167
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May 1, 1986

Sir Richard Doll
University of Oxford
Clinical Trial Service Unit
Radcliffe Infirmary
Oxford OX2 6HE

Dear Sir Richard:

Once again I enclose two copies of a letter extending your consulting agreement with Monsanto. We have changed the fee from $1000 to $1500 per day. Considering the recent drop in the dollar this is less generous than it appears to be.

We hope to see you and Lady Doll this year. As usual, we are flexible about the timing and will leave it up to you. We are particularly interested in pursuing the general topic of what we ought to be doing in the long run at Monsanto. George told you at CIIT that I spent my time trying to solve differential equations. That is not true. They are integral equations.

Seriously, we welcome your guidance on such issues as, for example, the usability of biological markers and how best to exploit our medical data base. The members of the Biohazards Committee will no doubt have their own questions, and we can make all of this more specific when we have settled on a date.

I am sending you separately a response to your letter of 25 March on vinyl chloride studies.

Yours sincerely,

Bill Gaffey

William R. Gaffey, Ph.D.
Epidemiology Director

/jf

Enclosures

There is *limited evidence* in experimental animals for the carcinogenicity of a mixture of 1,2,3,6,7,8- and 1,2,3,7,8,9-hexachlorodibenzo-*para*-dioxins.

There is *inadequate evidence* in experimental animals for the carcinogenicity of 2,7-dichlorodibenzo-*para*-dioxin.

There is *inadequate evidence* in experimental animals for the carcinogenicity of 1,2,3,7,8-pentachlorodibenzo-*para*-dioxin.

There is *inadequate evidence* in experimental animals for the carcinogenicity of 1,2,3,4,6,7,8-heptachlorodibenzo-*para*-dioxin.

Overall evaluation

2,3,7,8-Tetrachlorodibenzo-*para*-dioxin is *carcinogenic to humans (Group 1)*.

In making the overall evaluation, the Working Group took into consideration the following supporting evidence:

(i) 2,3,7,8-TCDD is a multi-site carcinogen in experimental animals that has been shown by several lines of evidence to act through a mechanism involving the Ah receptor;

(ii) this receptor is highly conserved in an evolutionary sense and functions the same way in humans as in experimental animals;

(iii) tissue concentrations are similar both in heavily exposed human populations in which an increased overall cancer risk was observed and in rats exposed to carcinogenic dosage regimens in bioassays.

Other polychlorinated dibenzo-*para*-dioxins are *not classifiable as to their carcinogenicity to humans (Group 3)*.

Dibenzo-*para*-dioxin is *not classifiable as to its carcinogenicity to humans (Group 3)*.

OPINION—"EXPERTS WHO TALK RUBBISH"

Editors' Note: The following editorial first appeared in Svenska Dagbladet/Brännpunkt, *Sweden's leading daily newspaper, on Monday, 3 September 2001. It is reprinted here with permission of the five scientist authors:*

Hans-Olov Adami, professor of cancer epidemiology, Karolinska Institute
Anders Ahlbom, professor of epidemiology, Karolinska Institute
Anders Ekbom, professor of epidemiology, Karolinska Institute
Lars Hagmar, professor of environmental medicine, Lund University
Magnus Ingelman-Sundberg, professor of molecular toxicology, Karolinska Institute

Some medical scientists take liberties with the truth, publishing poorly researched studies. They make statements in the media against their own better judgement, and some are not even active in the research area in question. The media and the public should be cautious.

Research is financed by the public, primarily through taxes, but also via gifts, donations and other voluntary contributions. The demand for correct and comprehensible information on research results is thus well justified. The University Ordinance reinforces this demand by assigning scientists three main tasks: research, instruction and provision of information to the public, the so-called 'third assignment'. This third 'assignment' entails the obligation to communicate findings in a correct manner, and in medical research it covers new treatment methods and medication, improved diagnostic procedures and new information on health risks attributable to lifestyle and environmental factors. But new research findings rarely lend themselves to simple and definitive statements. Research is a slow process. Our view of reality only changes gradually in the light of new scientific results.

At times, data can be contradictory, and it can take a frustratingly long time for a clear view of the situation to emerge. At times there is major – sometimes tempting - scope for researchers to present subjective interpretations of their own and other experts' scientific results.

At the same time, the public has a justifiable need for scientific opinions to be presented by established experts, for these opinions to be based on accepted principles, and for the subjective aspects of findings to be frankly described as such.

The majority of researchers are honest, reliable, and judicious. However, a small minority of them take liberties with the truth or make statements in the media against their own better judgment. Their motivation might stem from a craving for attention or a desire for fame, more funding for their research or some other form of acknowledgement. These ambitions can lead them to supply the public with unfounded speculation, incorrectly interpreted results, or even outright falsification.

Such spurious activity occurs on several levels:

1.Outright falsification through the pure fabrication of data, suppression of results or manipulation of data in order to obtain better support for a certain thesis.

2.Presentation of incomplete or unpublished data, or selective reporting on findings.

3.Deliberate exaggeration of the importance of the results obtained.

4.Unprofessional speculation outside their own areas of expertise.

In Sweden we have found examples in all these categories. At the first level, there was one Swedish cancer researcher, among others, who fabricated results concerning genetic variations in tumours as a prognostic instrument. He was forced to resign from his academic post.

The other categories do not involve pure fabrication, but are rather instances of a lack of professionalism and judgement. Scientific legitimacy is abused and the public misled. In the second category, there was a Swedish cancer researcher who issued a statement to the press summarizing a lecture he intended to hold at a parascientific conference, saying that NMT mobile telephones caused brain tumours. The data he was referring to were not possible to objectively evaluate since they were unpublished.

An example from the third category was a Swedish scientist who reported on a small pilot study on mobile telephones and the risk of brain tumours: no greater risk had been found on the whole, but according to the scientist, the location of these tumours had shifted to the side of the skull where the telephone is applied. This kind of interpretation seems bizarre in biological terms and is probably based on chance findings.

However, the researcher in question has appeared in the media on several occasions, presented his findings as robust and issued warnings against using mobile phones. We think it is generally wrong to discuss pilot studies in the media, as the main study will, by definition, not have been concluded, and pilot studies are intended to test methodology.

A further example stems from *DN Debatt* on 5 April. A scientifically dubious study was taken as the basis for far-reaching speculation about a greater risk of cancer in babies that are breast-fed. Similar examples of poorly substantiated studies in the social sciences – presented in the media as established truths – were described by Sören Wibe in *Brännpunkt* on 5 May.

With regard to the fourth category, we can cite a Swedish scientist who maintained, in complete earnest and in one of the country's leading newspapers, that mad cow disease could be caused by greater mobile telephone use.

The scientist in question does not do research in the area in question.

What kinds of scientists are we criticizing? Our criticism applies to a handful of the 1,200 or so senior medical scientists in Sweden. These individuals attract a high proportion of the media attention involving medical research—and this on dubious grounds. At the same time, they enjoy only limited recognition, or none at all, in the scientific community.

One Swedish scientist, for example, recently made a series of sensational claims that Aspartame (an artificial sweetener) causes cancer, that mobile phones cause brain tumours, that environmental toxins in human milk cause cancer in breast-fed babies, and that alcohol is a major cause of cancer.

A verification process operates within the scientific community itself, thanks to the application of various monitoring instruments, the most important of which is evaluation through critical discussion. Publication of research in scientific journals takes place only after independent experts selected by a periodical have scrutinized the findings in question.

No results are considered robust until they have been reproduced by other scientists. This means that in important research areas, shoddy research or exaggerated findings are always discovered by the scientific community. However, there are no monitoring mechanisms for scientists' 'third assignment', entailing the provision of information to the public. Too much controversy undermines public confidence in scientists. This in turn affects credibility when it comes to publicizing important, well-founded research results. It also affects opportunities to conduct research that requires public participation in one form or another.

We need to develop mechanisms to verify research results that are presented to the public. These mechanisms must be similar to those used by scientists to verify findings within the research community. The aim is to improve the reliability of information provided to the public.

It is very important that those who pass the results of research on to the public, including the media, make sure that the scientist concerned is an authority in his field and has acquired a solid reputation by assigning realistic dimensions to his results.

There are now easily accessible databases on the Internet that can provide quick answers to questions of whether a scientist is really active in a given research field, and whether he publishes his results in reputable scientific journals. These publications display colossal differences in quality, and it is important that greater credence be given to those findings published in the better journals.

As far as research done abroad is concerned, Swedish experts are often asked to comment on findings when they are presented to the Swedish public. Results publicized by Swedish scientists should usually be submitted to other Swedish or foreign experts for comment. In our opinion, these instruments should be employed to ensure the effective presentation of correct and important research results to the public and in this way bolster public confidence in research and scientists in general.

Secret Ties to Industry and Conflicting Interests in Cancer Research

Lennart Hardell, MD, PhD,[1*†] Martin J. Walker, MA,[2‡] Bo Walhjalt,[3‡] Lee S. Friedman, BA, MSc,[4§] and Elihu D. Richter, MD, MPH[5]

Background *Recently it was reported that a Swedish professor in environmental health has for decades worked as a consultant for Philip Morris without reporting his employment to his academic employer or declaring conflicts of interest in his research. The potential for distorting the epidemiological assessments of hazard and risk through paid consultants, pretending to be independent, is not exclusive to the tobacco industry.*

Methods *Documentation is drawn from peer reviewed publications, web sites, documents from the Environmental Protection Agency, University reports, Wellcome Library Special Collections and the Washington Post.*

Results *Some consulting firms employ university researchers for industry work thereby disguising industry links in the income of large departments. If the industry affiliation is concealed by the scientist, biases from conflicting interests in risk assessments cannot be evaluated and dealt with properly. Furthermore, there is reason to suspect that editors and journal staff may suppress publication of scientific results that are adverse to industry owing to internal conflict of interest between editorial integrity and business needs.*

Conclusions *Examples of these problems from Sweden, UK, and USA are presented. The shortfalls cited in this article illustrate the need for improved transparency, regulations that will help curb abuses as well as instruments for control and enforcement against abuses.* Am. J. Ind. Med. 2006.

KEY WORDS: cancer research; conflicts of interest; consulting ethics; industry sponsors

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A RECENT DISCLOSURE: RYLANDER AND PHILIP MORRIS

Recently it was revealed that the Swedish professor in environmental health at the Gothenburg University, Dr. Ragnar Rylander, had worked for decades as a contracted consultant for Philip Morris without reporting this outside commission to his employer or declaring conflicts of interest in his research [Diethelm et al., 2005; Editorial, 2006]. His consultancy generated substantial amounts of money both for research and as consultant fees from the tobacco industry. The scientific integrity of his publications has been questioned [Diethelm et al., 2005]. Swedish law requires that public servants, including academic researchers report

Professor Adami together with Professor Trichopoulus, both at Harvard,
stated in an Editorial already in 2001, in the same issue of New England Journal of Medicine that published a US study on mobile phone use and brain tumours by Peter Inskip et al, that
…' *the use of cellular telephones does not detectably increase the risk of brain tumours*'
and that '*This study allays fears raised by alarmist reports that the use of cellular telephones causes cancer'*.
This statement was far beyond what was scientifically defensible, e.g. longest duration for use was only up to 5 years.

IARC

In order to evaluate the carcinogenic effect of RF-EMF on humans, a meeting took place during 24 – 31 May 2011 at the International Agency for Research on Cancer (IARC) at WHO in Lyon, France. The Working Group consisted of 30 scientists representing four areas:

Overall chair: Jonathan M. Samet

Animal cancer studies (David L. McCormic, chair)

Epidemiology (Anders Ahlbom, chair)

Exposure (Ronald Melnick, chair)

Mechanistic and other relevant data (Christopher J. Portier, chair)

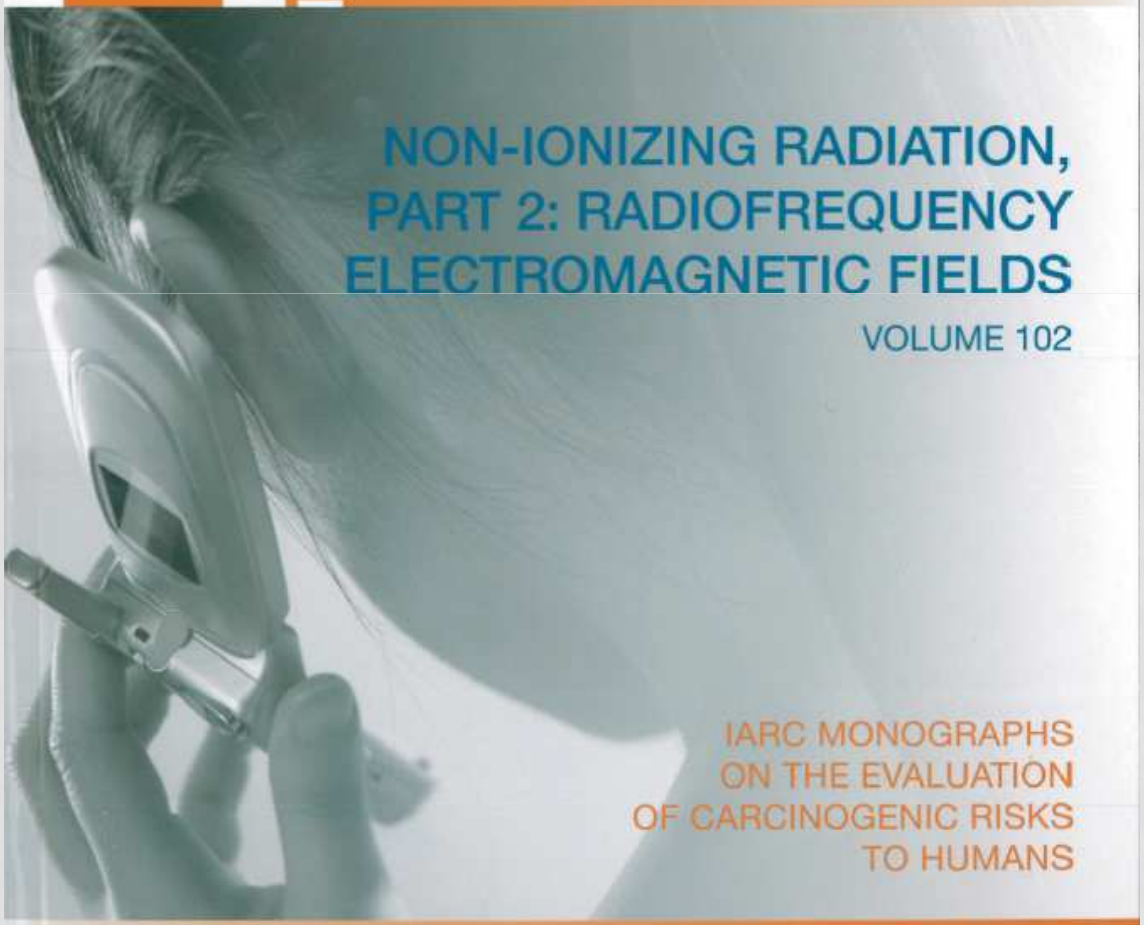
OFFICIAL PRESS RELEASE 23 May 2011 FROM MONA NILSSON:

Leading expert Anders Ahlbom linked to the Telecom Industry.

CONFLICT OF INTEREST AT THE WHO

Professor Ahlbom, who is appointed to chair the expert group on epidemiology at the upcoming IARC evaluation of the carcinogenicity of mobile phone radiation, is the co-founder of “Gunnar Ahlbom AB” a Brussels-based lobby firm aiming to assist the telecom industry on EU regulations, public affairs and corporate communications.

IARC MONOGRAPHS



NON-IONIZING RADIATION, PART 2: RADIOFREQUENCY ELECTROMAGNETIC FIELDS

VOLUME 102

IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS

International Agency for Research on Cancer

World Health Organization

IARC

On 31 May 2011 the International Agency for Research on Cancer (IARC) at WHO categorised the radiofrequency electromagnetic fields (RF-EMF) from mobile phones, and from other devices that emit similar non-ionising electromagnetic fields, as a Group 2B, i.e. a 'possible', human carcinogen

Group 1, which are '**established**' human

Group 2A, which are '**probable**' carcinogens

Group 2B, which are '**possible**' carcinogens

Group 3, where the agent is '**not classifiable**'

Group 4, where the agent is '**probably not carcinogenic to humans**'

A fact sheet from WHO, June 2011 shortly after the IARC decision stated:

‘To date, no adverse health effects have been established as being caused by mobile phone use’,
‘Tissue heating is the principal mechanism of interaction between radiofrequency energy and the human body’

(http://www.who.int/mediacentre/factsheets/fs193/en/).