

Glioblastomas Have Doubled in Number in England Since Mobile Phones Were Introduced in 1995.

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On October 28, 2018, *Microwave News* published a report on two research teams from UK, in which each had observed a rise in glioblastoma in England between 1995 and 2014. Glioblastomas are the most malignant brain tumours leading to death in nearly 100% of the cases shortly after detection (1). While incidence and location of the brain tumours were comparable in both studies, the conclusions about the pathogenesis of the tumours were different. Philips et al. (2) see the cause for the rise in glioblastoma in the increasing use of mobile phones, while de Vocht (3) is of the opinion that such an assumption can be excluded with a high probability. This dispute is in some way evocative of the controversy between the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the U.S. National Toxicology Program (NTP). In the \$ 30-million study, the NTP detected malignant schwannoma in the heart and glioblastoma in the brain of male rats after exposure to mobile phone radiation for a period of two years. ICNIRP, a non-governmental organization under the undisclosed control of the telecommunication industry, which is responsible for the establishment of safety limits for non-ionizing radiation in Europe and beyond, tried to play down the significance of the NTP findings by casting doubts on their reliability. While ICNIRP has totally ignored any progress of research since the turn of the century (4), de Vocht based his findings on what he calls “synthetic counterfactuals”, which sounds – rightly or wrongly – more like “alternative facts”.

I. Philips et al.: The rise in glioblastoma in England between 1995-2015 suggests adverse environmental or lifestyle factors

In March 2018 the *Journal of Environmental and Public Health* published a study by Philips et al. which showed that the number of glioblastoma had more than doubled in England between 1995 and 2015 (3).

The cautious conclusions reached by the authors are:

- A linear and highly statistically significant increase in primary glioblastoma over 21 years from 1995-2015; especially in the frontal and temporal lobes of the brain. This has aetiological and resource implications since on the whole, overall incidence of tumours did not increase.
- The average annual increase in all three age groups analyzed is strongly statistically significant, although most of the cases are in the group of over 54 years of age,
- The rise in age-standardized incidences cannot be fully accounted for by improved diagnosis, as it affects specific areas of the brain and just one type of brain tumour that is generally fatal. We suggest that widespread environmental or lifestyle factors may be responsible, although our results do not provide additional evidence for the role of any particular risk factor.
- These results highlight an urgent need for funding more research into the initiation and promotion of glioblastoma. This should include the use of CT imaging for diagnosis and research into modern lifestyle factors that might affect tumour metabolism.

In a supplementary letter (5) requested by the editor of the journal the authors explained the background of their paper. First, they state that as scientists they work on cancer, its causes and the possible preventive measures for 20 years. Then they outline their approach to the current research and address the available scientific literature on this topic. This literature points out – even if

extremely discreet – that there might be a relation between the rise in glioblastoma and mobile phone use. They also report that in 2011, on the occasion of an EU conference in Brussels, two leading epidemiologists told them that it is rather useless to investigate the rise in glioblastoma as long as no definite trend can be derived from the data. Finally they recommended that their study should be reproduced in other countries and that, if the results are confirmed, the real causes responsible for the rise in glioblastoma must be investigated with high priority.

II. Slesin: The location of the glioblastoma tells a story

Shortly after Philips et al. had published their findings Louis Slesin, editor of the *Microwave News*, presented the results to the general public. Until his report appeared these new data from UK were – astonishingly – hardly noticed by science. He cited Alasdair Philips, first author of the study: “We found a sustained and highly significant increase in glioblastoma throughout the 21 years and across the ages. The incidence rate of glioblastoma, the most aggressive and quickly fatal brain tumour is rising dramatically in England while the rates for lower grade tumours have decreased, masking this dramatic trend in the overall data.”

The widespread environmental and lifestyle factors Philips et al. list as a possible cause include, of course, the use of mobile phones. However, the suspicion that mobile phones might be responsible for these unexpected findings reaches almost the state of certainty, if Philips’s further comments are considered: “When we looked at the incidence of glioblastoma tumours we found an even more dramatic rise in frontal and temporal regions of the brain. This raises the suspicion that mobile phone use may be promoting gliomas. Indeed our findings support previous work by Lennart Hardell’s group in Sweden.”

In their epidemiological studies, Lennart Hardell and his co-workers observed a significant increase in glioblastoma in long-term mobile phone users. Hardell, asked by Slesin for his opinion, agreed with Philips’s assessment and added that besides Philips’s study also the NTP Study which showed glioblastoma in the brain of male rats exposed to mobile communication radiation for two years (2) support the reliability of his epidemiological results. Slesin also points to the fact that an increase in glioblastoma has been observed in other countries as well. There is only one recent study, an American one, in which this could not be observed.

Asked by Slesin for a comment, the American neurophysiologist David Carpenter summarized the current research as follows: “This appears to be the evidence that has been predicted from all the recent case-control studies showing an association between cell phone use and brain cancer. The question now is whether we see the same trend in the American population.”

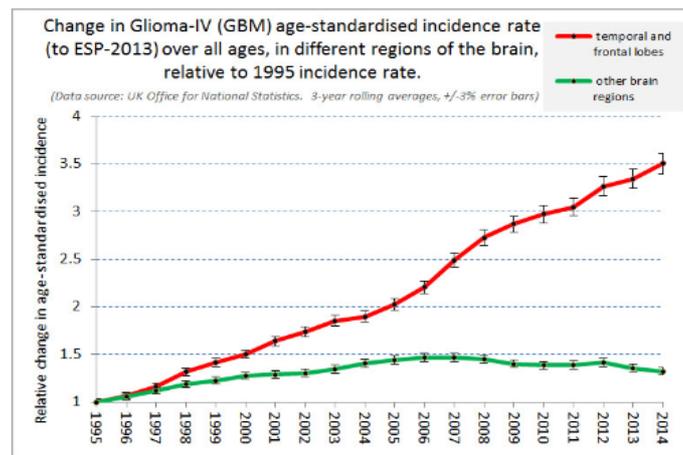
III. de Vocht: The significant increase in glioblastoma is unlikely due to mobile phones

In an answer to the study of Philips et al., which looks as if it would have been ordered, Frank de Vocht from the British University of Bristol published his own research results. They confirm the significant rise in glioblastoma in England between 1995 and 2014, but exclude with high probability, mobile phones being the cause (4). Two years earlier however, he was still of the opinion that mobile phones could indeed be a causal factor for the rise in glioblastoma in the temporal lobe (7). In his new paper he has given up this suspicion, because – as he claims – the age-dependent evaluation of the patients definitely speaks against such a causal relationship. Far more significant to him, until now unknown environmental factors or the improved diagnosis may be the real causes for the observed rise in glioblastoma. With regard to the Philips et al. paper which was more or less ignored by the scientific community so far he claims that his way of data evaluation would have been superior to that of Philips. Yet he failed to state that that his evaluation is based on a method directed to record tumour initiation, but not tumour promotion. The results from Philips et al. as well as his own data speak far more for the assumption that the observed rise in glioblastoma is in reality based on tumour promotion, which is the accelerated development of glioblastoma from early-stage

tumours. The significance of tumour promotion by mobile phone radiation has convincingly been proven by Alexander Lerchl, (8).

IV. Slesin: Why should the rise in glioblastoma be attributed to other factors and exclude mobile phones?

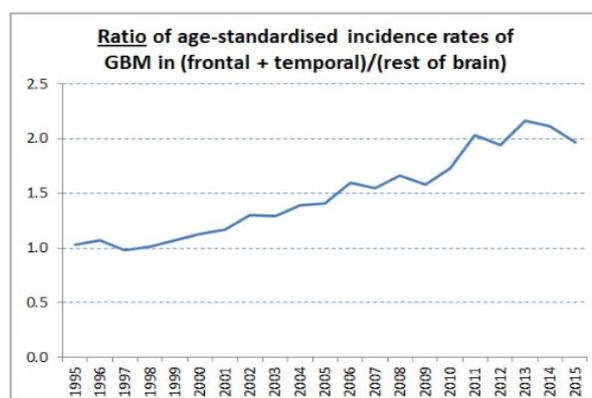
When Slesin asked Philips for a comment on de Vocht's deviant opinion, he responded and sent the following graph:



“It clearly shows that most of the increase in glioblastoma occurred in just two regions of the brain, the temporal and frontal lobes. There is no reason to believe that better diagnosis would favour one part of the brain over another. I am not saying it is necessarily mobile phones, but surely that is the most obvious possibility. After all, the temporal and frontal lobes are exposed to the most radiation when a phone is held up to the ear.”

On reading Slesin's report in *Microwave News* (1) de Vocht explained in an e-mail that he did not find Alasdair Philips's graph surprising, because something like 80-90% of glioblastoma occur in the frontal and temporal lobes. That is where you would “see the largest effect”.

When *Slesin* once again asked Philips for a comment on de Vocht's claim, he sent another graph and wrote back:



“As you can see, from 1995 to 1997, there was about the same number of tumours in the frontal and temporal lobes as there were in the rest of the brain. The ratio of cases was about one. Now, there are twice as many and the ratio in the graph has risen to two. We can clearly see a doubling.”

According to Philips, the doubling held true after correcting for the ageing population (people get more brain tumours when they get older). In absolute numbers, both groups – the one with glioblastoma in the frontal and temporal lobes and the one with glioblastoma in other brain regions – had just over 300 cases in 1995. While in 2015 there were 1379 cases in the frontal and temporal lobes and 705 in the other regions of the brain. Over the same period, the number of glioblastoma not classified to a specific brain region stayed fairly constant at about 500.

V. Adlkofer: Conclusions

If a chemical compound gives evidence for a carcinogenic effect in *in-vitro*, as well as in animal and epidemiological studies, the probability approaches certainty that this agent is carcinogenic for humans. Mobile phone radiation causes genetic damage in isolated human cells: shown in the REFLEX Study and others; it causes malignant tumours in the hearts and brains of male rats and genetic damage in the brain of rats and mice: proven in the NTP Study; it causes glioblastoma in long-term users of mobile phones: revealed in epidemiological studies by Hardell et al. among others. If it needed any further proof, Philips et al. and unintentionally also de Vocht did provide it with their recent research results. Therefore, it must be assumed that mobile communication radiation generated by G1 up to G4 causes among other diseases cancer in humans. In the long term, the WHO's International Agency for Research on Cancer (IARC) in Lyon, France, which in 2011 classified mobile communication radiation as being "possibly carcinogenic to humans", will not be able to withstand any longer the demand from independent science to finally adjust the classification to the reality of: "carcinogenic to humans".

Until today, the mobile communication industry, the originator of this threat to mankind, ignores all available findings by claiming that no biological mechanism has been detected so far which could be responsible for a health risk. The governmental institutions responsible for the protection of the people from environmental health risks listen to this nonsense claim and refuse to intervene. Together, they refer to their claqueurs in science, gathered in the national and international advisory boards for governments, UN and WHO, who for years pretend the harmlessness of the mobile communication radiation. They will also ignore the doubling of the glioblastoma rate in England in the course of the last 20 years, especially by claiming that the overall brain cancer rate remained constant over this time. However, mobile phone radiation does obviously not only initiate the development of cancer – as shown in the NTP Study – but promotes also its growth and differentiation – as demonstrated among others by Alexander Lerchl though more against his own intention (8). The general public is far from being correctly informed about the present state of research and the possible health risks related to mobile phone radiation. This is mostly due to the failure of the media to honestly report about the progress made in this area of research. They prefer just as the *Deutsche Ärzteblatt* (9) or the *New York Times* (10) to confuse the public with articles shedding doubts on facts proven long ago.

As it looks like, the mobile communication industry and politics today silently assume that the public discussion on possible health risks through mobile phone radiation may slowly abate after the introduction of the new G5 standard necessary for the intended digitization of the world. Since G5 radiation rarely penetrates the human skin, they in advance of any research obviously rule out a further rise in glioblastoma in the brain – so far the most terrible outcome – and optimistically also all the other hazardous effects on the human body. Independent scientists strongly doubt that the assumption is justified since the skin, the largest organ of the human body, may not be able to protect people from the effects of the G5 radiation, which presents an entirely new challenge to the all life on earth. So far no research has been carried out which allows the conclusion that G5 radiation is safer than the preceding G1 up to G4 standards. The G5 standard, too, will be inflicted upon human society without any prior check of its compatibility with health. However, the few results available so far indicate that G5 radiation may lead to permanent tissue damage even after short exposures (11). These findings are reason enough to advise caution, but they will obviously be totally ignored.

Industry and governments assume that a causal link between mobile phone radiation and the many complaints of people concerned can be excluded as long as no mechanism as to how mobile phone radiation exerts its many biological effects has been documented. There are some hypotheses, but the final proof is still missing. The late William Ross Adey, an American scientist with outstanding international reputation in bioelectromagnetics, advised the REFLEX consortium shortly before he passed away that knowledge in biochemistry, molecular biology and epidemiology may not be sufficient to finally detect the underlying mechanisms for the biological effects of the electromagnetic radiation. Based on the vision he had developed over decades of research he wrote:

“Bioelectromagnetics research has opened the door to a new understanding of the very essence of living matter in physical regulation at the atomic level, beyond the realm of chemical reactions in the exquisite fabric of biomolecules. Without versatility in biophysics that matches their typical knowledge in molecular biology and biochemistry, none of these students may cross this threshold to the cutting edge of in future medical research.”

Ongoing uncertainty of the mechanism on how mobile phone radiation may exert its biological effects is from the economic point of view more opportune rather than finding out that this mechanism starts at the atomic level where the essence of life begins. Therefore, it must be feared that the funding of a research study such as asked for by Ross Adey over 20 years ago will properly never be carried out.

- (1) <https://microwavenews.com/news-center/gbm-frontal-and-tempral-lobes>
- (2) <https://www.hindawi.com/journals/jep/2018/7910754/>
- (3) <http://www.bris.ac.uk/social-community-medicine/people/frank-g-de-vocht/pub/170739034>
- (4) <https://pandora-foundation.eu/2018/10/26/how-the-mobile-communication-industry-deals-with-science-as-illustrated-by-icnirp-versus-ntp/>
- (5) <https://www.hindawi.com/journals/jep/2018/2170208/>
- (6) <https://microwavenews.com/news-center/gbms-rising-uk>
- (7) https://research-information.bristol.ac.uk/files/92911233/1_s2.0_S0160412016303865_main.pdf
- (8) https://stiftung-pandora.eu/wp-content/downloads/adlkofer_stellungnahme-zu-lerchl-09-03-2015.pdf
- (9) <https://www.aerzteblatt.de/nachrichten/98916/FDA-bezweifelt-Krebsrisiko-durch-hochfrequente-elektromagnetische-Felder>
- (10) <https://microwavenews.com/news-center/defending-indefensible>
- (11) <https://insights.ovid.com/pubmed?pmid=30247338>