



Mobile Phone Use and Brain Tumours: Latest Reviews and Incidence Rates

A recently published French case-control study by Coureau¹ and others on mobile phone use and brain tumours needs to be viewed in the context of all of the available evidence and against a backdrop of brain tumour incidence data from around the world.

Importantly, the authors found:

"No statistically significant association was observed overall for those who used mobile phones regularly (defined as at least once a week for more than 6 months) compared to non-users."

They only found an association in "the heaviest users when considering life-long cumulative duration (≥ 896 h)". However, the number of subjects in this category was small and the authors themselves cautioned having "found indication of recall bias regarding exposure data." In a separate statement² the authors also stated:

"...it is important to underline that we are talking about an association and not about a cause-effect relationship. It therefore does not mean that intensive users of mobile phones will develop brain cancer." (Unofficial Translation)

It is also useful to note that the recently released Mobile Telecommunications and Health Research (MTHR) Programme Final Report³ in the U.K concluded in relation to the epidemiological studies of cancer:

"Taken together, the studies discussed in this section and those in Section 2 of the MTHR Report 2007 do not suggest that exposure to mobile phone signals is associated with an increased risk of cancer. Given the short time that mobile phone use has been widespread, none of these studies has been able properly to investigate risk in relation to long-term phone use."

Similarly, the 2013 review published by the Nordic Radiation Safety Authorities⁴ concluded:

"Since 2011, a number of epidemiological studies on mobile phone use and risk of brain tumours and other tumours of the head have been published. The overall data on brain tumour and mobile phone use do not show an effect on tumour risk."

¹ Coureau G et. al., *Mobile phone use and brain tumours in the CERENAT case-control study*. Occup Environ Med. 2014 May 9; [Epub ahead of print]. <http://dx.doi.org/10.1136/oemed-2013-101754>

² Press Release, Institute national de la santé et de la recherche médicale, *Utilisation massive du téléphone portable & tumeurs cérébrales*, 13 May 2014, <http://presse-inserm.fr/utilisation-massive-du-telephone-portable-tumeurs-cerebrales/12519/> Original French quote reads: "il est important de souligner qu'il s'agit d'une association et non d'un lien de cause à effet. Cela ne signifie donc pas qu'une personne utilisant massivement son téléphone portable développera une tumeur au cerveau"

³ MTHR Programme Management Committee, *Mobile Telecommunications and Health Research Programme – Report 2012*, 11 February 2014, available from <http://www.mthr.org.uk/documents/MTHRreport2012.pdf>

⁴ <http://www.nrpa.no/dav/1ce2548717.pdf>



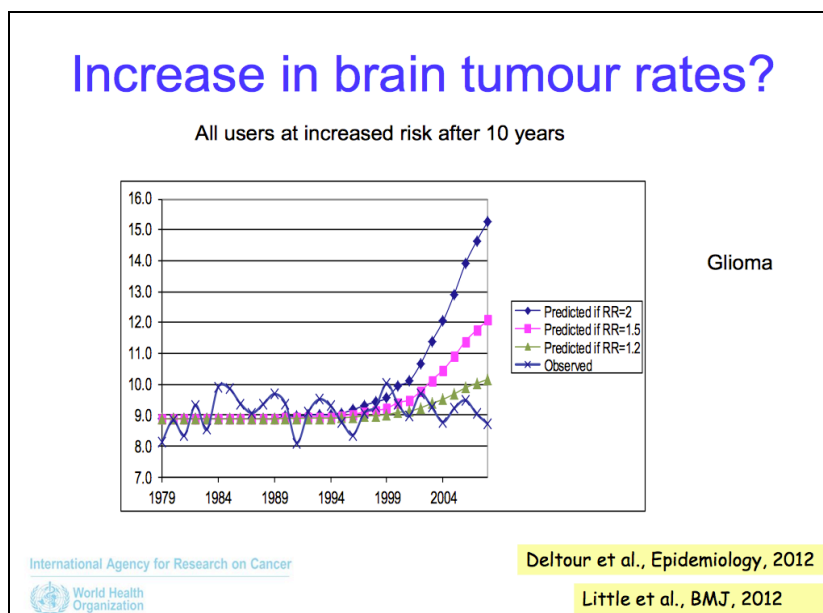
It is also useful to review any claims of a linkage against the backdrop of tumour incidence rates. In a paper published by Deltour et. al⁵, the authors analyzed age-standardized incidence rates of gliomas amongst men and women in the Nordic countries between 1979 and 2008. They found:

"No clear trend change in glioma incidence rates was observed. Several of the risk increases seen in case-control studies appear to be incompatible with the observed lack of incidence rate increase in middle-aged men. This suggests longer induction periods than currently investigated, lower risks than reported from some case-control studies, or the absence of any association."

Likewise, Little et. al⁶, analysed glioma incidence in the United States and found:

"Age specific incidence rates of glioma remained generally constant in 1992-2008 (-0.02% change per year, 95% confidence interval -0.28% to 0.25%), a period coinciding with a substantial increase in mobile phone use from close to 0% to almost 100% of the US population. If phone use was associated with glioma risk, we expected glioma incidence rates to be higher than those observed, even with a latency period of 10 years and low relative risks (1.5)."

The International Agency for Research on Cancer (IARC) recently presented⁷ the following slide which was based on the data from the two studies mentioned above, clearly showing the predicted trend rates if there was a linkage between mobile phone use and gliomas (with assumed relative risks of 1.2, 1.5 and 2) versus the observed incidence rate which has remained relatively stable.



⁵ Deltour et.al, *Mobile phone use and incidence of glioma in the Nordic countries 1979-2008: consistency check.* *Epidemiology.* 2012 Mar;23(2):301-7

⁶ Little et al., *Mobile phone use and glioma risk: comparison of epidemiological study results with incidence trends in the United States,* *BMJ* 2012;344. <http://dx.doi.org/10.1136/bmj.e1147>

⁷ J. Schüz, *Are electromagnetic fields associated with cancer?* Workshop On EMF & Health Effects: From Science To Policy And Public Awareness, Athens, March 28, 2014, http://ec.europa.eu/health/scientific_committees/emerging/docs/ev_20140328_co04_en.pdf



In conclusion, it might be worth noting the following comment by the CEO of the New South Wales Cancer Council in Australia, Dr Andrew Penman⁸:

"Mobile phones have been widely used in Australia for nearly 20 years now. Contrary to concerns about mobile phones, we have seen absolutely no associated increase in brain cancer cases in Australia or overseas. Users should therefore not unduly worry that their device will give them brain cancer."

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⁸ Press Release, *Brain cancer mobile phone panic should be put on hold*, accessed 15 May 2014 from <http://www.cancercouncil.com.au/55695/news-media/latest-news-news-media/media-releases-news-room-news-media/brain-cancer-mobile-phone-panic-should-be-put-on-hold/>