England

England is a country that is part of the United Kingdom.

It shares land borders with Scotland to the north and Wales to the west. The Irish Sea lies northwest of England and the Celtic Sea lies to the southwest.

England is separated from continental Europe by the North Sea to the east and the English Channel to the south. The country covers much of the central and southern part of the island of Great Britain, which lies in the North Atlantic; and includes over 100 smaller islands such as the Isles of Scilly, and the Isle of Wight.

Median time to intracranial pressure monitoring is 3 hours in traumatic brain injury in England and Wales [1].

Impact of mobile phone use

Mobile phone use has been increasing rapidly in the past decades and, in parallel, so has the annual incidence of certain types of brain tumors. However, it remains unclear whether this correlation is coincidental or whether use of mobile phones may cause the development, promotion or progression of specific cancers. The 1985-2014 incidence of selected brain cancer subtypes in England were analyzed and compared to counterfactual 'synthetic control' timeseries.

Annual 1985-2014 incidence of high grade glioma, glioblastoma multiforme, and malignant neoplasms of the temporal and parietal lobes in England were modelled based on population-level covariates using Bayesian structural time series models assuming 5,10 and 15year minimal latency periods. Post-latency counterfactual 'synthetic England' timeseries were nowcast based on covariate trends. The impact of mobile phone use was inferred from differences between measured and modelled time series.

There is no evidence of an increase in malignant glioma, glioblastoma multiforme, or malignant neoplasms of the parietal lobe not predicted in the 'synthetic England' time series. Malignant neoplasms of the temporal lobe however, have increased faster than expected. A latency period of 10 years reflected the earliest latency period when this was measurable and related to mobile phone penetration rates, and indicated an additional increase of 35% (95% Credible Interval 9%:59%) during 2005-2014; corresponding to an additional 188 (95%CI 48-324) cases annually.

A causal factor, of which mobile phone use (and possibly other wireless equipment) is in agreement with the hypothesized temporal association, is related to an increased risk of developing malignant neoplasms in the temporal lobe [2].

1)
Lawrence T, Helmy A, Bouamra O, Woodford M, Lecky F, Hutchinson PJ. Traumatic brain injury in England and Wales: prospective audit of epidemiology, complications and standardised mortality. BMJ Open. 2016 Nov 24;6(11):e012197. doi: 10.1136/bmjopen-2016-012197. PubMed PMID: 27884843.
2)
de Vocht F. Inferring the 1985-2014 impact of mobile phone use on selected brain cancer subtypes using Bayesian structural time series and synthetic controls. Environ Int. 2016 Dec;97:100-107. doi: 10.1016/j.envint.2016.10.019. PubMed PMID: 27835750.

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