

# Epileptic seizures linked to significant risk of subsequent brain tumor

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Epileptic seizures can precede the development of a subsequent brain tumour by many years, suggests research published online in the *Journal of Neurology, Neurosurgery and Psychiatry*.

The risk seems to be greatest among those aged between 15 and 44 when first admitted to hospital for an epileptic seizure, the findings show.

The researchers base their findings on first time admissions for epilepsy from the Oxford Record Linkage Study (ORLS) for 1963 to 1998, and national Hospital Episode Statistics (HES) data for England for 1999 to 2005.

These data were then linked to subsequent diagnoses of or deaths from brain tumours.

The results showed that compared with people admitted for other common and relatively minor disorders, those admitted with an epileptic seizure for the first time were just under 20 times as likely to develop a brain tumour across both sets of admissions data.

Accounting for the fact that tumours might have been missed or not recorded in the first year after admission for epilepsy, this figure fell to between a 7.5 (HES data) and almost a 9-fold (ORLS data) greater risk.

The risk of developing a cancerous brain tumour was twice as high as it was for a non-cancerous growth.

Those with epilepsy were more than 25 times as likely to develop a cancerous brain tumour and more than 10 times as likely to develop a non-cancerous growth as those admitted for other causes.

The risk was greatest in younger people aged between 15 and 44 who were between 24 times (ORLS data) and 38 times (HES data) more likely to develop a brain tumour than people of the same age without epilepsy.

Furthermore, the risk persisted for several years after the initial admission to hospital, with a more than a six-fold greater risk up to 14 years later in the ORLS data group and a five-fold higher risk up to seven years later in the HES data group.

The authors point out that brain tumours are rare, even among those with epilepsy. The overall risk of a [brain tumour](#) in 15 to 44 year olds was about 1 to 2%.

"Our study suggests that tumour as an underlying cause for [epilepsy](#) may not become apparent for several years after onset, and indicates a need for ongoing vigilance," they write.

The seizure activity may indicate either a pre-clinical phase of tumour development or could be caused directly by a tumour which doesn't show up on MRI scans, they say.

Provided by British Medical Journal

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