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Vitamin E a potential biomarker for development of brain tumors

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Researchers at Umeå University in Sweden and the Cancer Registry of Norway have studied possible causes behind the development of brain tumours. The results, published in the journal *Oncotarget*, show differences in expression of certain molecules known as metabolites when comparing healthy individuals with people who would eventually develop brain tumours. The greatest difference were found when looking at vitamin E.

"We know that common health-related lifestyle factors such as smoking and alcohol are not associated with brain tumours. So finding these signs of a possible link between vitamin E and brain tumours was rather interesting and something which we now will study more closely," says Beatrice Melin, researcher at the Department of Radiation Sciences and one of the article co-authors. "But we must point out that the results are preliminary and that further studies with a larger number of patients are needed to verify this link between vitamin E and brain tumours."

A group of researchers at the Umeå University departments of Radiation Sciences and Chemistry, led by Beatrice Melin and Henrik Antti, conducted the study using a unique biobank material of serum samples from brain tumour patients, taken up to twenty years before their diagnosis. The researchers looked at differences in metabolites between patients who would later develop brain tumours and a control group.

"Other studies have also showed signs of disadvantageous health effects from vitamin E, so our results are in line with current research findings

concerning other types of tumours," says Henrik Antti, researcher at the Department of Chemistry and co-author. "We are of course interpreting our results carefully and will now proceed with this research to investigate if genetics play a role in the observed biomarker patterns."

The use of metabolomics to study underlying variables for future disease, such as brain tumours, is a unique field facilitated by access to the large and structured longitudinal collections of biobank samples in Umeå and Oslo.

More information: Metabolomic screening of pre-diagnostic serum samples identifies association between α- and γ-tocopherols and glioblastoma risk, *Oncotarget*, 2016.

Provided by Umea University