

Study redefines brain tumor diagnosis and treatment

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Not all brain cancers are the same but together they represent a deadly disease that has been difficult to identify and treat. Scientists at multiple institutions have found a new way of classifying brain cancers that could very well change how the illness is diagnosed and treated.

The study, a project of The Cancer Genome Atlas, found striking molecular differences between various forms of gliomas or brain tumors.

"We found molecular signatures that better define clinical behavior based on our analysis," said W.K. Alfred Yung, M.D., chair of Neuro-Oncology at The University of Texas MD Anderson Center. "We hope this will impact how physicians both diagnose and plan therapies for [brain cancer](#)."

Yung and Roeland Verhaak, Ph.D., associate professor of Bioinformatics and Computational Biology at MD Anderson, were co-authors and study leads in an investigation that involved more than 300 scientists from multiple institutions.

"We looked at the six most common forms of glioma and were able to deduce that these can be effectively grouped into three distinct molecular super clusters of lower-grade gliomas," said Verhaak. "It is exciting that our findings are likely to provide a basis for the upcoming update to the WHO classification of tumors of the central nervous system."

The study looked at the molecular makeup of brain tumors including gene mutations, chromosomal abnormalities and other alterations. Results from the study were published in the June 10, 2015 issue of the *New England Journal of Medicine*.

The study represents a major step in classifying and treating brain tumors more precisely based on their genetic makeup, said Daniel J. Brat, M.D., Ph.D., a researcher and neuropathologist at Winship Cancer Institute of Emory University, Atlanta, and co-leader of the study.

The scientists believe that the use of the biomarkers in the diagnosis of these forms of [brain tumors](#) will lead to a much more consistent manner of diagnosis and patient management. The study, which involved 44 institutions, concluded that molecular tests in addition to standard histopathological examination under the microscope will be more accurate in indicating whether the disease is more aggressive or will respond to certain chemotherapies.

Provided by University of Texas M. D. Anderson Cancer Center

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