

Researchers develop web-based app to predict glioma mutations

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UKHealthCare.
Markey Cancer Center

An interactive web-based tool for predicting the likelihood of an IDH1 or IDH2 mutation in patients with infiltrative gliomas

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Age of Patient:

Prior history of grade II or III glioma ? ☐ Yes
☐ No

Is the tumor a glioblastoma ? ☐ Yes
☐ No

Status of R132H IDH1 Test: ☐ Positive
☐ Negative
☐ Not Done

Predicted Probability of IDH1 or IDH2 Mutation: 0.00%

☐ Show Details of Calculation

A screenshot of the IDH1 prediction model designed by University of Kentucky researchers. Credit: University of Kentucky

A new [web-based program](#) developed by University of Kentucky Markey Cancer Center researchers will provide a simple, free way for healthcare providers to determine which brain tumor cases require testing for a genetic mutation.

Gliomas – a type of tumor that begins in the brain or spine – are the most common and deadly form of [brain cancer](#) in adults, making up about 80 percent of [malignant brain cancer](#) cases. In some of these cases, patients have a mutation in a specific gene, known as an IDH1 mutation – and patients who have this tend to survive years longer than those who do not carry the mutation.

The program, developed by UK researchers Li Chen, Eric Durbin, and Craig Horbinski, uses a statistical model to accurately predict the likelihood that a patient carries the IDH1 mutation and requires screening. Healthcare providers need only answer four questions in the application.

Gliomas are often tested for IDH1 mutation following surgery to remove the tumor, but undergoing this type of testing often requires stringent insurance pre-approvals due to rising healthcare costs, Horbinski says.

"Currently, there are no universally accepted guidelines for when gliomas should be tested for this mutation," Horbinski said. "Obtaining insurance pre-approval for additional molecular testing is becoming more commonplace, and this program will assist [healthcare providers](#) with an evidence-based rationale for when IDH1 screening is necessary."

Additionally, Horbinski notes that the program will help conserve research dollars by helping brain cancer researchers narrow down which specific older gliomas in tumor banks – previously removed in a time before IDH1 testing was routine – should be tested as data for research projects.

Provided by University of Kentucky

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