

The relative risk of brain cancer

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Doctors know that you're at a higher risk for breast, colon and prostate cancers if they've been found in your family. Brain cancer can now be placed on that same list, says a new study by Tel Aviv University and the University of Utah.

Dr. Deborah Blumenthal, co-director of Tel Aviv University's Neuro-oncology Service at the Tel-Aviv Sourasky Medical Center, says that a family history of brain cancer, like those of other cancers, should be reported to the family doctor during a routine medical checkup.

The new study, using data from the Utah Population Data Base (UPDB) at the University of Utah in Salt Lake City, was unique in the large number of cases examined, which tracked back at least three generations and as far as ten generations in some families. The brain tumors studied by the researchers include glioblastoma, the same tumor afflicting Sen. Edward Kennedy, who has been undergoing treatment since June.

"Until now, brain tumors were not thought to be an inheritable disease," says Blumenthal. "A few earlier studies did find an increased risk in immediate relatives, but in such cases it is hard to distinguish between the effects of a shared environment and heredity," she notes.

Genetic Predisposition

Blumenthal, an affiliate associate professor at the University of Utah Huntsman Cancer Institute, and co-author Lisa Cannon-Albright, of the Department of Biomedical Informatics at the University of Utah, found

that a family history of cancerous brain tumors does indeed increase one's odds for succumbing to the disease — in some cases, a four-fold increase. While the number of primary brain tumors that are inheritable remains low, these cases may provide insight into specific genetic susceptibilities that predispose an individual to primary brain tumors.

Reported in the current issue of *Neurology*, the study was conducted on medical records of nearly 1,500 people from Utah who had available genealogic material spanning at least three generations. Data dates back to the early 1800s. The study effectively eliminates environmental factors by looking at extended family relations.

"The study is unique in that that we were able to go back so far in tracking genealogy records," notes Prof. Blumenthal. "Another special aspect of this study is that we've been able to identify high-risk pedigree families, in some cases with 5,000 or more descendants."

Even if brain cancer already appears in your family, the likelihood of it occurring in descendants and relatives is still quite low. There are only about 17,000 primary brain tumors found in Americans every year, of which half are high grade. Less than 5% of these relatively rare brain cancers are hereditary. Consequently, the risk of inheriting the "genes" of a brain tumor from a parent or grandparent is low. What's exciting, she says, is that the scientific community now has a population of high-risk families they may be able to help and utilize to further genetic investigations.

Necessary Steps Before Prevention

With blood and tissue samples, researchers hope to find genes that are associated with brain tumors, and determine those at risk with greater certainty. Though such identification may be years away, this current study is foundational, setting the stage for early screening of people at

risk so preventative measures can be taken before any tumor develops.

Prof. Blumenthal emphasizes, "The risks of having such a hereditary tumor are very low. Reporting to your family doctor that brain cancer runs in the family just gives a more comprehensive picture of your medical history. It may provide doctors and family members with useful information."

Source: American Friends of Tel Aviv University

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