

What to Know About Pediatric Brain Cancer

CU Cancer Center member Adam Green, MD, covers the symptoms, diagnosis, and treatment of pediatric brain tumors.

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May is Brain Tumor Awareness Month, which makes it a perfect time to turn the spotlight on pediatric [brain cancer](#). Brain cancer is the second most common cancer in children, after leukemia, and brain tumors are the most common solid tumors in children and adolescents, with more than 4,000 new diagnoses each year, according to the American Cancer Society.

University of Colorado Cancer Center member [Adam Green](#), MD, has spent his career studying and treating pediatric brain tumors. We talked with him about what parents and others should know about the disease.

Are brain tumors more common in children than adults? Why is that the case?

Everything's relative; almost all cancers are more common in adults than children, but brain tumors are much higher on the list of common cancers in children than adults. We don't really know why that is. We don't think it's due to genetic inheritance or things they're exposed to; in general, they're just random occurrences. We do think a lot of childhood cancers come from normal development that goes awry. Obviously all parts of kids are developing, but their brains, especially, are growing and developing very quickly.

How treatable are pediatric brain tumors?

For childhood cancer, overall, the cure rate is around 85%. Brain tumors are more like 75% to 80%, but there's a big range. There are some brain tumors in children that have a 95% long-term survival rate, but there are some that are still close to zero.

What's an example of a tumor type with a lower survival rate?

High-grade gliomas are about 10% to 15% of childhood brain tumors; they're overall the third most common type of brain tumor in children, but they're the most common cause of death from

any childhood cancer because they're so hard to treat and so resistant to treatment.

What are the symptoms of pediatric brain tumors?

There are a lot of potential symptoms, based on the location of the tumor, including headaches, nausea, problems with vision, hearing, and speech, loss of balance, seizures, and changes in personality or behavior. But it tends to be a combination of symptoms that prompts us to take a closer look. Headache alone, for instance, would very rarely represent a brain tumor in children. But if it's combinations of symptoms, like headache and vomiting, or headache and trouble with vision, or trouble with vision and poor growth — those are what should clue parents and pediatricians into the possibility of a brain tumor.

How are brain tumors diagnosed?

If we think a child may have a brain tumor based on their symptoms, the next step is usually an MRI or CT to look for the presence of a tumor. If we do find a mass, we will usually biopsy it to determine if it is cancerous or not.

How are pediatric brain tumors treated?

Some are treated with surgery alone, but other treatments include radiation and chemotherapy. In recent years we have seen some major advances across many different types of tumors. A lot of that comes from understanding the genetic changes that are driving the tumors to develop and grow and finding ways to attack those specific weaknesses in the tumors. There also is work going on to better understand how we can harness the patient's own immune system to fight their cancer.

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