Brain Tumors

MaineHealth
Brain tumors are tumors in the brain. They can happen at any age and can cause different symptoms depending on their size and location. Brain tumors are put into groups based on what kind of tissue they came from, where they grow in the brain, and how fast the tumor is growing.

A tumor that starts and grows in the brain is called a primary brain tumor. Primary brain tumors get their name from the type of cell or the part of the brain where they start growing. Brain tumors rarely spread out of the brain.

A secondary brain tumor is a cancer that has spread (metastatic) to the brain from another part of the body.

How are brain tumors treated?

Your doctors will help you understand the options for management, based on what kind of tumor it is and what grade or stage it is. Here are some of the treatments that they might recommend:

- **Surgery:** Some tumors are best treated by trying to remove a portion or the entire tumor. This is called a craniotomy. A craniotomy is a type of brain surgery. During the surgery, a piece of bone from the skull is removed to give the doctor access to your brain. After the surgery is done the bone is put back and the skin is closed. Some tumors only need a biopsy where a tiny piece is removed through a small hole to find out the type of tumor.
- **Radiation therapy:** This is when radioactive medicines or light waves (x-ray or gamma ray) are used to slow the growth or kill tumor cells in your brain.
- **Chemotherapy:** Using chemicals to kill cancer cells in your body. This can be taken like a medicine by mouth or injected into the blood.
- **Watching and waiting:** Some tumors are better to keep watching without any surgery, radiation or chemotherapy.

**Nurse Navigator Support**

Nurse Navigators are available to address your questions and concerns about your brain tumor and treatment options. If assigned a Navigator, we will call you to introduce ourselves and make sure you have our contact information. If you are interested in a Navigator, ask your surgeon if one is right for you.

**Brain MRI:** You may have a new brain MRI done after your treatment to give doctors a picture of your brain after your surgery. This will be your new baseline and future MRIs will be compared to this to check for any new tumor growth.

**Is a brain tumor always cancer?**

Not all brain tumors are cancer, however some brain tumors that are not cancer may be dangerous. Your surgeon may explain how your tumor acts by using these words:

- **Aggressive or malignant** — A tumor that grows quickly is sometimes referred to as aggressive or malignant. This means that it will grow relatively quickly and is difficult to cure. It may also come back after treatment.
• Slow growing or benign — A tumor that grows more slowly is sometimes referred to as benign. Unfortunately, some slow growing brain tumors can be threatening because they invade or press on the brain or nerves. Also, some brain tumors can change from slow growing types to fast growing tumors.

Many brain tumors are hard to cure. Surgery, radiation, or chemotherapy can be used for both malignant and benign brain tumors.

**Parts of the Head**

Your care team will use many of these words to talk about the head and brain. If you have questions or concerns, please talk with a care team member.

• The **scalp** is the skin covering of the head that is often covered with hair.
• The **skull** is the hard bony covering that encases and protects the brain.
• The **meninges** are the three layers inside the skull that cover the brain. These layers provide added protection to the brain. The layers are called the dura, arachnoid and pia.
• **Cerebrospinal fluid (CSF)** surrounds the brain in the space between the arachnoid and pia. It also fills the open spaces within the brain to provide a protective cushion. The fluid is normally clear and looks like water. It is made inside the brain and provides nutrients to the brain.

**Parts of the Brain**

The **cerebral cortex (cerebrum)** makes up the largest portion of the brain. It is divided into two halves called the left and right hemispheres:

• The **left hemisphere** controls movement of the right side of the body.
• The **right hemisphere** controls movement of the left side of the body.
Each hemisphere has four lobes. Each lobe controls certain body functions:

- The **frontal lobe** is behind the forehead. It controls thought, personality, behavior, judgment and problem solving. Concentration, attention and the abilities to organize and plan are also controlled here.
- The **occipital lobe**, which is located in the back of the brain, controls vision.
- The **parietal lobe** controls sense of touch, perception, awareness of body parts, talking, writing, math, grammar, organization of speech and one’s ability to tell size, shape and color of things.
- The fourth lobe, called the **temporal lobe**, regulates hearing, smell, taste, memory, organization and understanding of speech.
- The **brain stem** is located under the cerebral cortex. It connects the cerebral cortex to the spinal cord. It sends messages back and forth from the cerebral cortex to other parts of the body. Attention, arousal, and sleep and wake functions are based here. The brain stem also controls breathing, heart rate and blood pressure.
- **Cranial nerves** are twelve pairs of nerves that come out from the base of the brain and brain stem. These nerves control smell, hearing, eyesight, taste, swallowing, coughing, eye movements and other body functions.
- The **cerebellum** lies at the back of the skull below the cerebral cortex. It helps to coordinate movement of the arms and legs and balance.
- The **spinal cord** is the large bundle of nerves leaving the head to the arms and legs as the communication line for messages traveling to and from the brain.

Revised with permission. Copyright, 2018, The Ohio State University Wexner Medical Center, Columbus, Ohio, Patient Education. All rights reserved. The Ohio State University Wexner Medical Center is not responsible for any consequences resulting from the use or misuse of the information on this handout.