

Editorial on Nerves of Brains

Editorial

In our brain-imaging work, we began by looking for patterns that could help us diagnose and treat mental health conditions, such as ADHD, depression, bipolar disorder, and anxiety. But as we studied more and more scans, we also realized that certain brain patterns corresponded to personality types. You're one of those people who gets things done on time, shows up on time, follows through on promises, and copes well with life's ups and downs. In general, you aren't much of a risk taker and you prefer to follow the rules. With this brain type, you love trying new things, have a wide range of interests, and would rather do things on the spur of the moment than have a set schedule. You think outside the box, don't believe that rules apply to you, and are typically late for appointments. Organization isn't your strong point, and you're such a risk taker that your behavior might get you into trouble. Weighing about 3 pounds in the average adult, the brain is about 60% fat. The remaining 40% is a combination of water, protein, carbohydrates and salts. The brain itself is not a muscle. It contains blood vessels and nerves, including neurons and glial cells. The brain sends and receives chemical and electrical signals throughout the body. Different signals control different processes, and your brain interprets each. Some make you feel tired, for example, while others make you feel pain. The cerebral cortex is divided into two halves, or hemispheres. It is covered with ridges (gyri) and folds (sulci). The two halves join at a large, deep sulcus (the interhemispheric fissure, AKA the medial longitudinal fissure) that runs from the front of the head to the back. The right hemisphere controls the left side of the body, and the left half controls the right side of the body.

Brain tumors have more than 120 different types, according to the National Brain Tumor Society. Some brain tumors, such as a glioblastoma multiformed, are malignant and may be fast-growing. Other types of brain tumors, such as a meningioma, may be slow-growing and benign. Primary brain tumors form in brain cells and are categorized by the type of cell or where in the brain they first develop. For instance, astrocytomas form in star-shaped cells called astrocytes. Pituitary tumors are found in the pituitary gland at the bottom of the brain. The most common primary brain tumors are called gliomas, which originate in the glial (supportive) tissue. About one-third of all primary brain tumors and other nervous system tumors form from glial cells. Brain stem gliomas are a type of astrocytoma that forms in the brain stem, which controls many vital functions, such as body temperature, blood pressure, breathing, hunger and thirst. The brain stem also transmits all the signals to the body from the brain. The brain stem is in the lowest part of the brain and connects the brain and spinal cord. Tumors in this area can be difficult to treat. Most brain stem gliomas are high-grade astrocytomas.