An astrocytoma is a tumor that arises from the star-shaped cells (astrocytes) that form the supportive tissue of the brain. Other supportive cells of the brain include oligodendrocytes and ependymal cells. Collectively, these cells are known as glial cells and the tissue they form is known as glial tissue. Tumors that arise from the glial tissue, including astrocytomas, are collectively referred to as gliomas. Grade I astrocytoma occurs most often in children and teens and account for 2% of all brain tumors. Grade II astrocytoma occurs most often in adults between the ages of 20 and 60. Grade III astrocytoma occurs most often in adults between the ages of 30 and 60, is more common in men and accounts for 4% of all brain tumors. Grade IV astrocytoma occurs most often in adults between the ages of 50 and 80, is more common in men and accounts for 23% of all primary brain tumors. The diagnosis of astrocytoma is based on a thorough clinical evaluation, characteristic physical findings, a careful patient history, and specialized tests, such as blood tests, neuroimaging techniques, and/or other diagnostic studies. Neuroimaging techniques, such as computed tomography (CT) scanning and magnetic resonance imaging (MRI) of the brain assist in evaluating tumor size, location, and other factors. During CT scanning, a computer and x-rays are used to create cross-sectional images of certain tissue structures. MRI uses a magnetic field to create cross-sectional images of particular organs and bodily tissues. Examination of a sample of the tumor (biopsy) and microscopic examination of tumor cells is used to determine the tumor type and grade.