

Glossary of Brain Tumour Terms.

Anaplastic - An anaplastic tumour is formed of cancer cells that are dividing rapidly and have little or no resemblance to normal cells.

Antibody - A protein is produced by the immune system to recognise and attach itself to an antigen that identifies something 'foreign' and therefore would potentially be a threat. The antibody then either neutralises or destroys the cell that has been identified.

Astrocytoma - A tumour that begins in the brain or spinal cord in small star shaped cells called Astrocytes.

Benign Tumour - This term is used to describe a low-grade tumour which grows slowly and is unlikely to invade into the surrounding brain tissue. However, although it does not invade surrounding brain tissue, it can press on vital parts of the brain, causing significant damage, disabilities and even death.

Biopsy - A biopsy is a process in which a hollow needle is passed into the brain tumour in order to take samples from various areas within that tumour. Analysis determines a precise diagnosis.

Blood-Brain Barrier - The blood-brain barrier is a membrane which surrounds the blood vessels within the brain and prevents the passage of harmful agents into the brain. However, it can also prevent certain drugs from entering the brain and this is why some drugs, which have been developed for other tumours, are ineffective for the treatment of brain tumours.

Cerebral Spinal Fluid - The fluid that surrounds and protects the brain and spinal cord.

Choroid Plexus - The tissues in the ventricles that actually make cerebral spinal fluid.

Chemotherapy - Chemotherapy is the use of drugs act to halt the growth of tumour cells, or to kill them. Many of these drugs can't be used for the treatment of brain tumours because they can't cross the blood-brain barrier to get to the site of the tumour. The most common drug used for the treatment of brain tumours is temozolomide.

Debulking - This refers to the removal of at least part of a tumour by surgery so that there is less tumour present for subsequent treatment by chemotherapy or radiotherapy.

Diffuse Brain Tumour - Diffuse is an adjective than can be used to describe an infiltrative nature of a tumour as opposed to focal tumours which are more confined or circumscribed. They are usually high grade but can be low grade.

DNA - DNA is what contains the genetic information that provides the instructions for our body to make proteins with a huge range of different functions.

Ependymoma - A type of brain tumour that forms in cells lining the spinal cord central canal or in the fluid filled spaces of the brain.

Glioblastoma – A type of fast-growing tumour that forms from glial cells that surround and support nerve cells.

Glioma - A type of brain tumour that begins in glial cells which surround and support nerve cells.

Grade - A brain tumour grade (as defined by the World Health Organisation) is based on how different tumour cells look from normal cells under a microscope, and on how quickly they grow. The

grade will be a value between 1 and 4, and reflects the aggressiveness of the tumour cells; the higher the grade, the more aggressive the tumour.

High-Grade Tumours - Grade 3: the tumour cells grow quickly, are likely to spread into nearby tissue, and the tumour cells look very different from normal cells. Grade 4: the tumour grows and spreads very quickly. These tumours can be difficult to treat and may not be removable by surgery, depending on the size and location within the brain and the extent to which they have invaded the surrounding tissue.

Histology - The study of cells and tissue under a microscope. A study of a slice of the tumour can provide specific information about tumour type and grade.

Immunosuppressive - Reduces the immune system response, making it less effective.

Immunotherapy - Immunotherapy refers to using the immune system in order to allow it to attack the tumour cells.

Isocitrate Dehydrogenase (IDH)- Mutant - A brain tumour that has a mutation in an IDH gene. IDH-mutant tumours tend to be less aggressive than IDH-wild type tumour.

Low-Grade Tumours - Grade 1: the tumour grows slowly and rarely spreads into nearby tissues. Depending on its location, it should be possible to remove the entire tumour by surgery. Grade 2: the tumour grows slowly, but may spread into nearby tissue and the tumour may regrow at some stage following surgery. Some tumours may develop to form a higher-grade tumour.

Malignant Tumour - These are high grade tumours where the cells are growing rapidly and are actively invading neighbouring brain tissue.

Metastatic Brain Tumour - One that has developed from a type of cancer that began in another part of the body and then spread to the brain through the blood stream or lymphatic system.

Mutation - A permanent alteration in the DNA sequence that makes up a gene, such that the sequence from what is found in most people and alters the function of the related protein.

Non Contrasting Enhanced Tumour - A brain tumour that does not break down the blood brain barrier and may not be fully visible on imaging, as the contrast agent used for imaging cannot flow into the brain.

Oligoastrocytoma - An oligoastrocytoma are intracranial tumours that are part of the glial cell continuum, with mixed oligodendroglioma and astrocytoma cell populations and typically occur in young adults.

Oligodendroglioma - A rare slow-growing tumour that begins in oligodendrocytes, which are cells that cover and protect nerve cells in the brain and spinal cord.

Pathology - This describes the study of various aspects of a disease including its cause and mechanisms of development. A pathologist works in close collaboration with clinical staff.

Peripheral Nervous System - The peripheral nervous system (PNS) is the division of the nervous system containing all the nerves that lie outside of the central nervous system (CNS). The primary role of the PNS is to connect the CNS to the organs, limbs and skin.

Proton Beam Therapy - This is a new form of radiotherapy which uses a specific form of radiation called proton beams. It is considered to be more accurate than existing radiotherapy with less damage to the tissue surrounding the tumour.

Radiotherapy - Radiotherapy, or radiation therapy, is used as part of cancer treatment to control or kill tumour cells. It can be administered alongside or after chemotherapy in certain forms of cancer. It is not used for all brain tumours and further research is needed in this area.

Recurrence - Return or regrowth of a brain tumour after surgery or treatment.

Resection - Surgery to remove part or all of a brain tumour.

Spinal Cord Central Canal - A fluid-filled space down the centre of the spinal cord.

Targeted Therapy - A targeted type of cancer treatment that uses drugs or other substances to precisely identify and attack cancer cells, usually while doing little damage to normal cells.

Types of Brain Tumours - The World Health Organisation (WHO) have listed over 120 different types of brain tumour in their 2016 guidelines. The location within the brain, the cell origination, pathology, and genetic make-up will determine the type of tumour.

Ventricles - The fluid-filled spaces of the brain.