VIRGINIA Cancer REGISTRY

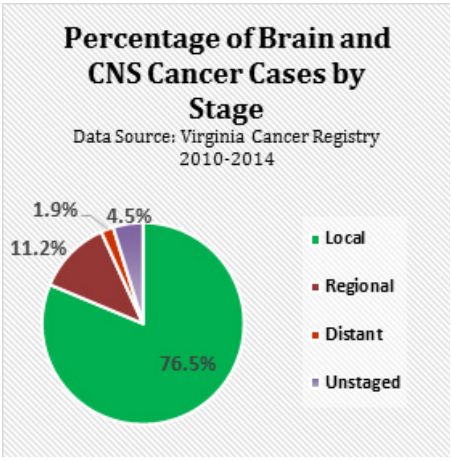
VCRVOICE

Brain and CNS Cancer **May 2018** VDH VIRGINIA DEPARTMENT OF HEALTH

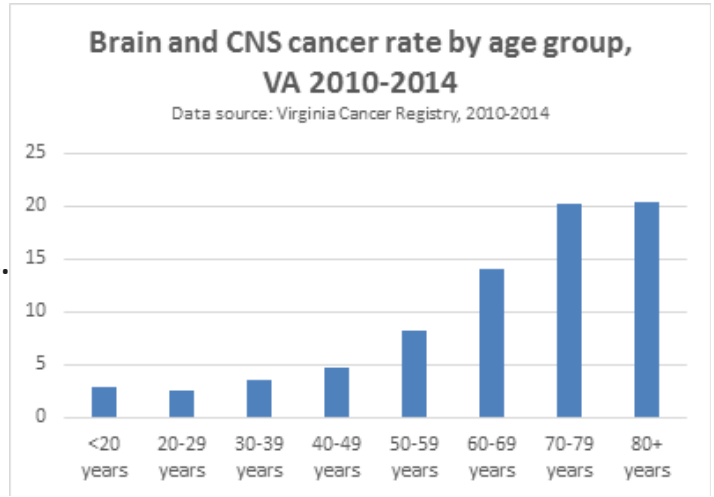
What Are Brain and Central Nervous System Cancer

- These cancers include all primary malignant and non-malignant tumors of the brain, other central nervous system (CNS), pituitary and pineal glands, and olfactory turoms of the nasal cavity (including brain lymphoma and leukemia).
- There are many types of cancers of the brain and CNS. Among the most deadly diseases in Glioblastoma, an aggressive type of cancer that can occur in the brain or spinal cord. Glioblastoma forms from cells called astrocytes that support never cesll, It is difficult to remove completely because of the way it growns into surrounding brain tissue.
- Brain and CNS tumors may be diagnosed by one or more of these procedures:
  1) Neurological examination by a doctor to review your sysptoms and test your vision, hearing balance, reflexes, and muscle strength and coordination.
  2) Imaging suck as an MRI to determine turmor location and size.
  3) Tissue Bipsy sampled either through a hollow neelde or by surgical removal to test for the type of cancer in the tumor.

Cancer Facts



- **Number of New Cases and Deaths per 100,000: The number of new cases of brain and other nervous system cancer was 6.4 per 100,000 men and women per year In the United States (6.2 in Virginia). The number of deaths was 4.3 per 100,000 men and women per year in the United States and (4.0 in Virginia). These rates are age-adjusted and based on 2010-2014 cases and deaths.**
- **The cancer is slightly more common in men than in women and among those with certain genetic syndromes. For brain and central nervous system cancer, 76.5% of cases are diagnosed at the local stage.**



Selected cancer counts and rates by gender and race, VA 2010-2014					
	Male Black	Male White	Female Black	Female White	State of Virginia
Cancer Site	Count (Rate per 100,000)	Count (Rate per 100,000)	Count (Rate per 100,000)	Count (Rate per 100,000)	Count (Rate per 100,000)
Glioblastoma	82 (2.3)	629 (3.9)	65 (1.4)	511 (2.8)	1334 (3.0)
Brain and CNS	155 (4.2)	1209 (7.8)	151 (3.5)	1034 (6.2)	2673 (6.2)

Data source: Virginia Cancer Registry, 2010-2014. Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

What are the Symptoms to Look For?

While some or all of these symptoms may occur, the most prevalent symptoms are seizures, personality changes, neurological deficit, and increased intracranial pressure.

Some seizure types are grand mal seizures, focal motor seizures (muscular twitching of face or limbs), visual hallucinations and blank stares (called absence seizures). The type of seizure often indicates what part of the brain the tumor affects.

Personality changes include a difference in the person's normal temperament, communication and speech patterns, and spells of confusion. The location and amount of pressure the tumor causes on the brain tissue affects the type and severity of these symptoms.

Normal brain functions may be lost as a growing brain tumor causes damage to healthy tissue by its infiltration of the normal cells or nerves, or by exerting harmful pressure on adjacent tissue. Lost brain functions may include various manifestations of muscular weakness or paralysis, blindness, hearing loss, and lack of facial sensation.

Besides pressure exerted by a tumor on adjacent brain tissue, overall pressure may increase within the skull caused by a blockage of the normal fluid and blood flow within the skull, or when the growing tumor or swelling damaged brain tissue enlarges within the confined intracranial space. Such increased pressure may cause headaches, nausea, sleepiness, or lead to coma and death.

What Are Our Risks?

Most brain tumors are not linked with any known risk factors and have no obvious cause. Some known risk factors do include exposure to radiation used as therapy to treat other conditions, family history of certain diseases or genetic factors in rare cases, and having a weakened immune system which increases the risk of primary CNS lymphomas. Research continues into uncertain or unproven risk factors such as exposure to electromagnetic fields from cell phone usage or power lines, aspartame consumption, exposure to some chemicals, and infections from certain viruses.

What Medical Treatments Are Available?

Once a brain or CNS cancer is diagnosed, several treatment options may be used alone or combined with other procedures to remove or kill the cancerous cells. Depending on the location and type of tumor, such options may include surgery, radiation therapy, chemotherapy and/or targeted drug therapy, and electrical tumor treating field (TTF) therapy. Palliative care may also be given to reduce pain or discomfort during other treatment regimens or when other options are not available.

References

1. VA Rate (Incidence): Virginia Cancer Registry. Based on combined 2010-2014 data. VA Rate (Mortality): VDH Division of Health Statistics. Based on combined 2010-2014 dat. Both rates are age-adjusted to the 2000 U.S. standard population.
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3. https://www.mayoclinic.org/diseases-conditions/glioblastoma/cdc-20350148
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