

# Astrocytomas and Oligodendrogliomas

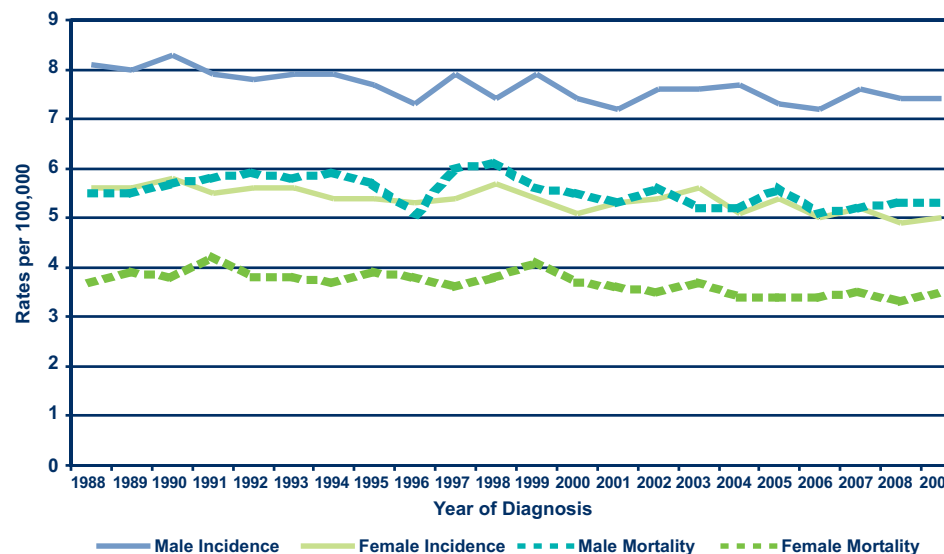


**G**liomas are tumors that begin in the brain or spinal cord. Astrocytomas and oligodendrogliomas are two types of gliomas. Astrocytomas are tumors that begin in the brain or spinal cord in small star-shaped cells called astrocytes, and account for approximately half of all primary brain and spinal cord tumors. Oligodendrogliomas are tumors that develop in supportive brain tissue cells called oligodendrocytes, and account for 3% of all primary brain and spinal cord tumors. Mixed gliomas are tumors containing both astrocytes and oligodendrocytes and account for 1% of all primary brain and spinal cord tumors. Primary brain tumors arise from the cells of the brain itself, rather than traveling or metastasizing to the brain from another location in the body. Gliomas can grow slowly (low-grade, grades 1 and 2), or rapidly (high-grade, grades 3 and 4). In the United States in 2013, the American Cancer Society estimates that 23,130 new cases of malignant brain and other nervous system tumors will be diagnosed (12,770 in males and 10,360 in females), and that

14,080 deaths will occur due to malignant brain and other nervous system tumors (7,930 males and 6,150 females). Of these, 2,185 diagnoses and 1,545 deaths are expected in California, where the incidence of brain and other nervous system tumors has declined by an average of 0.5 percent per year from 1988 to 2009 in both males

and females. Among California males, mortality due to brain and other nervous system tumors has declined by an average of 0.7 percent per year since 1993. Among California females, this figure has declined by an average of 1.0 percent per year since 1995 (See Figure 1).

**Figure 1: Age-Adjusted Brain and Central Nervous System Cancer Incidence and Mortality Rates by Sex In California, 1988-2009**



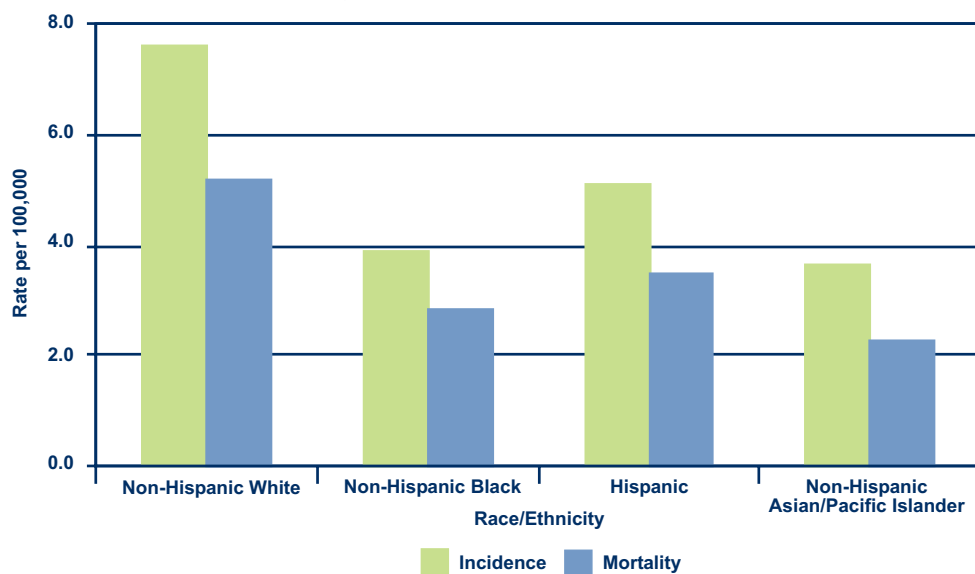
Prepared by the Cancer Registry of Greater California  
Source: California Cancer Registry

Brain and other nervous system cancer incidence (I) and mortality (M) rates are highest among non-Hispanic whites (I=7.6 per 100,000; M=5.2 per 100,000), followed by Hispanics (I=5.1 per 100,000; M=3.5 per 100,000), then non-Hispanic blacks (I=3.9 per 100,000; M=2.8 per 100,000), and are lowest among non-Hispanic Asians/Pacific Islanders (I=3.6 per 100,000; M=2.3 per 100,000) (See Figure 2).

In California from 2000 through 2009, the majority of brain and other nervous system cancer patients were diagnosed at the localized stage (72.8 percent), with only 18.1 percent diagnosed at the regional stage, and 2.6 percent diagnosed at the distant stage. Five-year relative survival, a measure of the likelihood of surviving a specified cancer five years

past diagnosis, is about 36 percent for those diagnosed at the localized and distant stages, and 22 percent for those diagnosed at the regional stage (Table 1).

**Figure 2: Five-Year Age-Adjusted Brain and Central Nervous System Cancer Incidence and Mortality Rates by Race/Ethnicity in California, 2005-2009**



Prepared by the Cancer Registry of Greater California  
Source: California Cancer Registry

**Table 1: Stage Distribution and Five-Year Relative Survival by Stage at Diagnosis for Brain and Other Nervous System Cancer (Males and Females Combined), California, 2000-2009**

Stage at Diagnosis	Stage Distribution	Five-Year Relative Survival
Localized (Confined to Primary Site)	72.8%	35.9%
Regional (Spread to Regional Lymph Nodes)	18.1%	21.7%
Distant (Metastasized to Other Organs)	2.6%	35.8%
Unknown Stage	6.6%	21.1%

Source: California Cancer Registry  
Prepared by the Cancer Registry of Greater California.

