

PROFILE & DRUG DEVELOPMENT

BRAIN CANCER

GLIOBLASTOMA MULTIFORME (GBM)

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WHAT IS GBM?



GBM is the most common and most aggressive form of primary malignant brain tumor.

240,000 PEOPLE are diagnosed with GBM globally each year. That's equivalent to the population of Durham, NC.

that's **2-3 CASES** per **100,000** adults

SYMPTOMS

- Seizures
- Nausea and vomiting
- Headaches
- Hemiparesis
- Memory, personality, or neurological deficits

GBM is slightly more common in

MALES



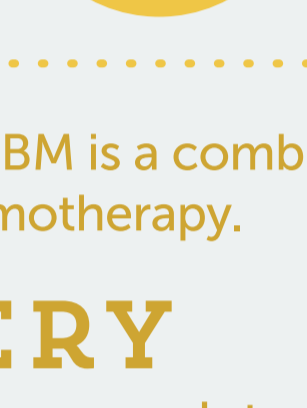
and slightly more common in

CAUCASIANS

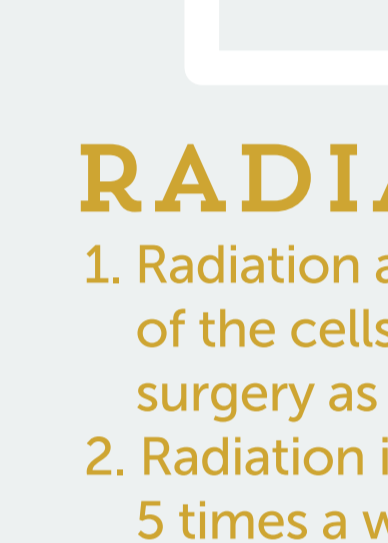
(in US).

TREATMENT

There is no available treatment for GBM is curative and options are extremely limited.



The most optimal treatment for GBM is a combination of surgery, radiotherapy, and chemotherapy.

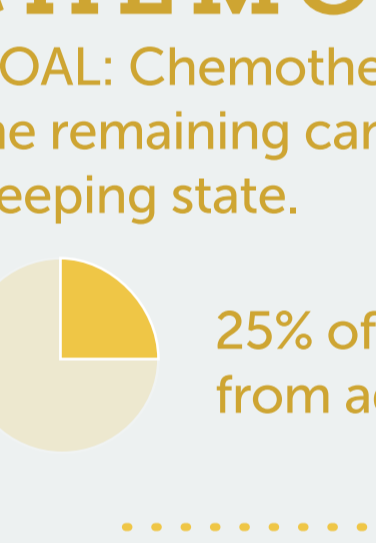


SURGERY

GOAL: removes as much tumor tissue as possible. It is believed that surgery gives patients a better prognosis when they begin other treatment.

RADIATION

1. Radiation aims to kill as many of the cells left behind from surgery as possible .
2. Radiation is usually given 5 times a week for 6 weeks.
3. Radiation is combined with the oral chemotherapy, Temozolomide.



+
Temozolomide increases survival time from **12.1 MONTHS** to **14.6 MONTHS.**

CHEMOTHERAPY

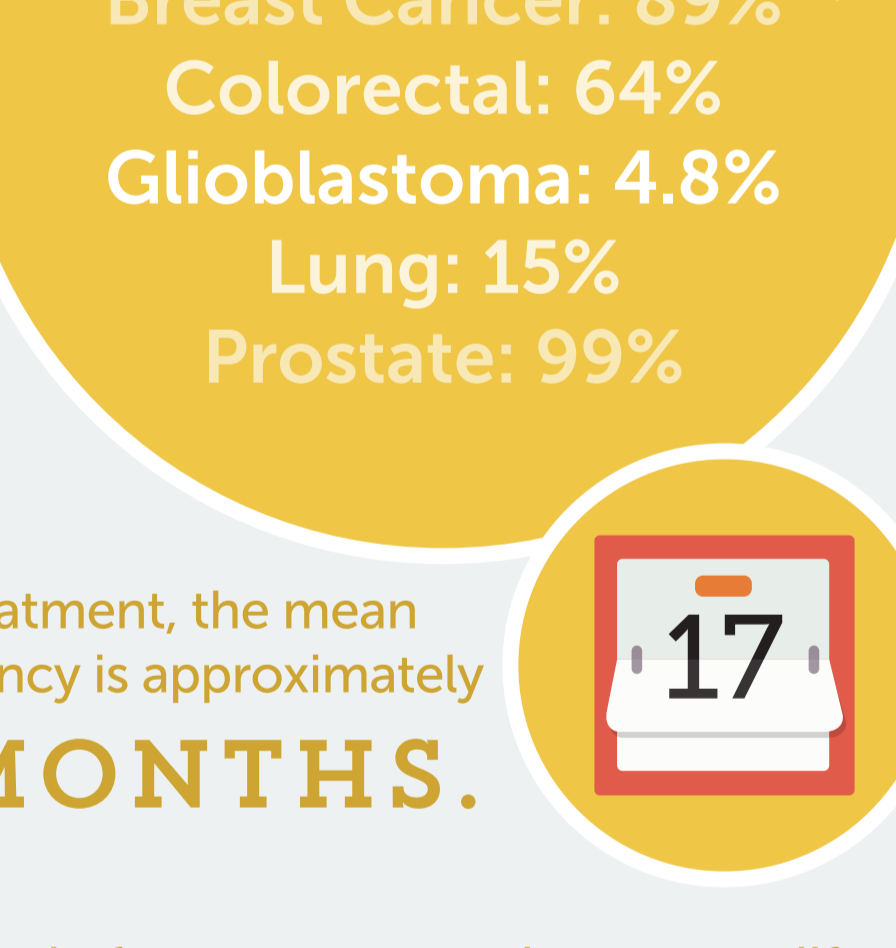
GOAL: Chemotherapy and radiation aim to put the remaining cancer cells into a nondividing, sleeping state.



25% of patients benefit from adjuvant chemotherapy.

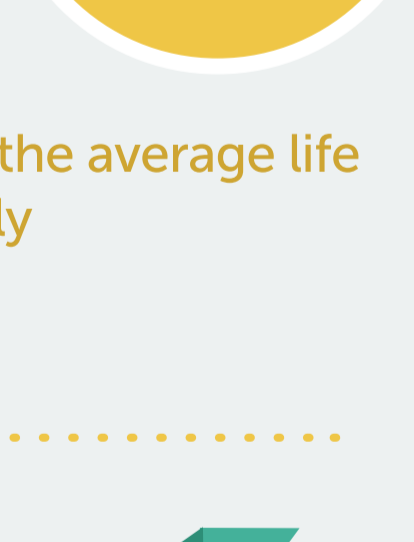
Rapid tumor growth, highly resistant tumors, and a lack of effective therapies contribute to making this one of

THE DEADLIEST CANCER TYPES.



Without treatment, the mean life expectancy is approximately

4.5 MONTHS.



With standard of care treatment the average life expectancy rises to approximately

15 MONTHS.

THE FUTURE



GBM is classified as an

ORPHAN DISEASE



This is defined as a disease that affects fewer than 200,000 people (in the U.S.).

Potential therapies can be eligible for **ORPHAN DRUG DESIGNATION**, which allows the developing company to receive tax breaks and market exclusivity upon approval of the therapy.

50 POTENTIAL NEW THERAPIES in active development, positive results in early stage trials.

50

These new therapies include:

- Immunotherapeutic Vaccines
- Anti-Angiogenesis
- Gene Therapy
- Cell Signaling Pathway Inhibitors
- Cytotoxics

76

76 GBM CLINICAL TRIALS were started in 2013

58 PHARMA & BIOTECH COMPANIES have sponsored GBM trials since 2010.

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