# Oligodendroglioma, IDH-mutant and 1p/19q-codeleted

- Low-grade IDH-mutant gliomas: from standard post-surgical treatments to novel IDH inhibitors
- Unlocking new horizons: advances in treating IDH-mutant, 1p/19q-codeleted oligodendrogliomas
- Identification of intrinsic imaging subtypes using clustering analysis based on dynamic contrast-enhanced magnetic resonance imaging radiomics features for gliomas: preliminary associations with gene expression profiles
- Early postoperative seizures in patients with adult-type diffuse gliomas: Incidence, risk factors, and clinical outcomes
- Characteristics, outcome, and prognostic factors of young patients with central nervous system World Health Organization grade 3 oligodendrogliomas IDH-mutant and 1p/19q codeleted: A French POLA network study
- α-synuclein expression in glioblastoma restores tumor suppressor function and rescues temozolomide drug resistance
- A single-arm phase 2 study of abemaciclib in adult patients with recurrent grade 3 oligodendroglioma
- The cortical high-flow sign in oligodendroglioma, IDH-mutant and 1p/19q-codeleted is correlated with histological cortical vascular density

---

---

**Source**: WHO Classification of Tumors of the Central Nervous System, 5th Edition (2021)

**Definition**: Oligodendroglioma, IDH-mutant and 1p/19q-codeleted, is a **diffuse glioma** defined molecularly by the presence of an **IDH1 or IDH2 mutation** and a **combined whole-arm codeletion of chromosomal arms 1p and 19q**. Both alterations are required for diagnosis.

## Key Features

- **Type**: Diffuse glioma of oligodendroglial lineage
- **Molecular markers**:
  - IDH1 or IDH2 mutation
  - Whole-arm 1p/19q codeletion
- **WHO Grades**: 2 or 3
- **Typical location**: Cerebral hemispheres, most commonly the frontal lobes
- **Histopathology**:
  - Round, uniform nuclei with perinuclear clearing (“fried egg” appearance)
  - Delicate, branching capillary network (“chicken wire” vasculature)
  - Calcifications common
- **Imaging**: Often well-demarcated lesion with calcifications on CT or MRI
- **Prognosis**: Favorable compared to IDH-mutant astrocytomas; sensitive to chemotherapy and radiotherapy

# Diagnostic Criteria

1. Diffuse glioma histology
2. Confirmed **IDH1/IDH2 mutation** (by sequencing or immunohistochemistry)
3. **Codeletion of 1p and 19q** (typically via FISH, PCR-based LOH analysis, or DNA methylation profiling)
4. No ATRX loss (ATRX retained)
5. No TP53 overexpression

# Treatment Options

see Oligodendroglioma treatment

# Notes

- Without 1p/19q codeletion, the tumor should be classified as an **astrocytoma** (if IDH-mutant) or **glioblastoma** (if IDH-wildtype).
- 1p/19q codeletion is associated with better prognosis and increased treatment responsiveness.