

Whole brain radiotherapy for intracranial metastases

Whole Brain Radiotherapy (WBRT):

In WBRT, the entire brain is treated with radiation. This approach is often used when there are multiple brain metastases or when the cancer has spread diffusely throughout the brain. WBRT is effective at controlling multiple tumors, but it may have some side effects, such as fatigue, hair loss, and short-term memory problems. The side effects depend on the dose and duration of treatment.

Congress of Neurological Surgeons Systematic Review and Evidence-Based Guidelines on the Role of Surgery in the Management of Adults With Metastatic Brain Tumors

Please see the full-text version of this guideline

https://www.cns.org/guidelines/guidelines-treatment-adults-metastatic-brain-tumors/chapter_2) for the target population of each recommendation listed below.

SURGERY FOR METASTATIC BRAIN TUMORS AT NEW DIAGNOSIS QUESTION: Should patients with newly diagnosed [metastatic brain tumors](#) undergo [Brain metastases surgery](#), [Stereotactic radiosurgery for brain metastases](#) (SRS), or [whole brain radiotherapy](#) (WBRT)?

RECOMMENDATIONS:

Level of Evidence 1: Surgery + WBRT is recommended as first-line treatment in patients with single [brain metastases](#) with favorable [performance status](#) and limited [extracranial disease](#) to extend [overall survival](#), [median survival](#), and [local control](#).

Level of Evidence 3: Surgery plus SRS is recommended to provide survival benefit in patients with metastatic brain tumors

Level of Evidence 3: Multimodal treatments including either surgery + WBRT + SRS boost or surgery + WBRT are recommended as alternatives to WBRT + SRS in terms of providing overall survival and local control benefits.

SURGERY AND RADIATION FOR METASTATIC BRAIN TUMORS QUESTION: Should patients with newly diagnosed metastatic brain tumors undergo surgical resection followed by WBRT, SRS, or another combination of these modalities?

RECOMMENDATIONS:

Level 1: Surgery + WBRT is recommended as superior treatment to WBRT alone in patients with single brain metastases.

Level 3: Surgery + SRS is recommended as an alternative to treatment with SRS alone to benefit overall survival.

Level 3: It is recommended that SRS alone be considered equivalent to surgery + WBRT.

SURGERY FOR RECURRENT METASTATIC BRAIN TUMORS QUESTION: Should patients with recurrent metastatic brain tumors undergo surgical resection?

RECOMMENDATIONS:

Level 3: Craniotomy is recommended as a treatment for intracranial recurrence after initial surgery or SRS. **SURGICAL TECHNIQUE AND RECURRENCE QUESTION A:** Does the surgical technique (en bloc resection or [piecemeal resection](#)) affect recurrence?

RECOMMENDATION:

Level 3: [En bloc resection](#) of the tumor, as opposed to piecemeal resection, is recommended to decrease the risk of postoperative leptomeningeal disease when resecting single brain metastases.

QUESTION B:

Does the extent of surgical resection (gross total resection or subtotal resection) affect recurrence?

RECOMMENDATION:

Level 3: [Gross total resection](#) is recommended over [subtotal resection](#) in [Recursive partitioning analysis class 1](#) class I patients to improve [overall survival](#) and prolong time to [recurrence](#).

The full [guideline](#) can be found at

https://www.cns.org/guidelines/guidelines-treatment-adults-metastatic-brain-tumors/chapter_2 ¹⁾.

Non-small cell lung cancer intracranial metastases whole brain radiotherapy

see [Non-small cell lung cancer intracranial metastases whole-brain radiotherapy](#)

Clear cell renal carcinoma brain metastases whole brain radiotherapy

[Clear cell renal carcinoma brain metastases whole brain radiotherapy](#)

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Nahed BV, Alvarez-Breckenridge C, Brastianos PK, Shih H, Sloan A, Ammirati M, Kuo JS, Ryken TC, Kalkanis SN, Olson JJ. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guidelines on the Role of Surgery in the Management of Adults With Metastatic Brain Tumors. Neurosurgery. 2019 Mar 1;84(3):E152-E155. doi: 10.1093/neuros/nyy542. PubMed PMID: 30629227.

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