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# Improvements in activities of daily living among patients with brain tumors are associated with age, baseline physical function, duration of rehabilitation, and tumor recurrence but not type

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## Abstract

Genetic testing has improved the accuracy of diagnosis of brain tumors, and treatment is now tailored to the type of brain tumor. In contrast, the factors that influence the improvement in independence in activities of daily living (ADLs) following rehabilitation have not been clarified, particularly the role of tumor type. In this retrospective cohort study of 358 participants, we analyzed changes in the Functional Independence Measure (FIM) from pre-rehabilitation to post-rehabilitation provided in an acute care hospital. Multiple regression was used to determine whether FIM gain is associated with age, gender, preadmission Karnofsky Performance Status (KPS), number of rehabilitation days, average duration of daily therapy (min/day), and tumor recurrence and type (WHO grade 1, 2, 3, and 4 gliomas; primary central nervous system lymphomas; and metastatic brain tumors). The results showed that older age ( $\beta$  -0.183), tumor recurrence ( $\beta$  -0.137), preadmission KPS < 80 ( $\beta$  -0.180), and higher baseline total FIM score ( $\beta$  -0.470) were associated with lower FIM gain whereas the average duration of daily therapy ( $\beta$  0.153) was associated with higher FIM gain. Brain tumor type was not associated with FIM gain. Improved independence in ADLs is more influenced by demographic, functional status, and treatment factors than differences in brain tumor type.

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