



# Depression Recovery in Older Adults with Stroke Impaired by Malnutrition

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## DESCRIPTION

Stroke remains one of the leading causes of disability and mortality among older adults worldwide. Following the acute phase, many patients are transferred to convalescent rehabilitation settings, where the focus shifts from life-saving measures to functional recovery and psychological support. Among the array of complications during stroke recovery, depression and malnutrition are both highly prevalent and often interrelated. While rehabilitation programs aim to improve both physical and mental well-being, the presence of malnutrition may impede progress in psychological domains, particularly in alleviating depressive symptoms.

### Depression in post-stroke patients

Post-Stroke Depression (PSD) is a common neuropsychiatric consequence that affects stroke survivors, particularly older adults. The development of depressive symptoms may occur due to a combination of biological changes in the brain, inflammation and psychosocial stressors such as loss of independence, chronic pain and altered family roles.

Symptoms of PSD include persistent sadness, apathy, fatigue, sleep disturbances and cognitive impairment, all of which can adversely affect motivation and participation in rehabilitation programs. Several studies have shown that untreated depression in stroke survivors leads to poorer functional outcomes, increased caregiver burden and longer hospital stays. Therefore, timely identification and management of depressive symptoms are considered essential components of post-stroke care [1-3].

### Malnutrition in older adults

Malnutrition is another frequent complication among older adults recovering from stroke, with prevalence estimates depending on the assessment criteria used. Contributing factors

include dysphagia, reduced mobility, medication side effects, cognitive decline and limited appetite.

Malnutrition is associated with reduced muscle strength, delayed wound healing, immune dysfunction and higher mortality rates. During rehabilitation, nutritional status significantly influences the capacity to engage in therapy, regain independence and achieve functional goals. Furthermore, malnutrition and depression often coexist, creating a vicious cycle in which one condition aggravates the other.

### Malnutrition and depression

Several biological and behavioral pathways link malnutrition and depression. Inadequate intake of essential nutrients such as amino acids, omega-3 fatty acids, B vitamins and minerals may impair neurotransmitter synthesis, alter neuronal function and promote inflammation all of which contribute to depressive states. Moreover, malnourished individuals may experience fatigue, weakness and diminished interest in social interactions or rehabilitation activities, which further exacerbates feelings of hopelessness and low mood.

Conversely, individuals with depression often experience reduced appetite and decreased motivation to eat, which can lead to further nutritional deterioration. In older adults, who may already have compromised physiological reserves, this bidirectional relationship poses significant risks to recovery [4-7].

### Impact of malnutrition on depression

Emerging evidence suggests that malnutrition may suppress the expected improvements in depressive symptoms during stroke rehabilitation. Patients with adequate nutritional support are more likely to show improvement in mood and engagement in therapy, while those with persistent malnutrition tend to exhibit slower or negligible changes in psychological parameters.

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A recent observational study in a geriatric rehabilitation setting found that stroke patients who were classified as malnourished at admission had significantly higher depression scores at discharge compared to their well-nourished counterparts. Even after adjusting for confounding factors such as age, stroke severity and baseline functional status, malnutrition remained an independent predictor of poor improvement in depression symptoms.

The physiological burden of undernutrition may reduce the brain's adaptive capacity, delay neuroplastic changes and increase susceptibility to mood disturbances. Additionally, inflammation associated with both stroke and malnutrition may contribute to neurochemical imbalances that impede emotional recovery [8-10].

## CONCLUSION

Malnutrition is a common and modifiable factor that can suppress improvements in depression symptoms among older adult patients undergoing convalescent rehabilitation after stroke. Recognizing the interplay between nutritional status and psychological well-being is essential for designing effective recovery strategies. Timely screening, individualized interventions and multidisciplinary collaboration are essential to support comprehensive care. By addressing malnutrition as part of stroke rehabilitation, clinicians can improve the overall quality of life and mental health outcomes for older adults navigating the challenging path of recovery.

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