

NEUROPLASTICITY IN STROKE AND THE ROLE OF NURSING AND PHYSIOTHERAPY IN PATIENT REHABILITATION

A NEUROPLASTICIDADE NO ACIDENTE VASCULAR ENCEFÁLICO E AS
ATRIBUIÇÕES DA ENFERMAGEM E DA FISIOTERAPIA NA REABILITAÇÃO
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ABSTRACT

INTRODUCTION: Stroke is a leading cause of functional disability, potentially resulting in motor, cognitive, and sensory deficits that compromise autonomy and quality of life. In this context, neuroplasticity represents a key mechanism for nervous system reorganization, stimulated by therapeutic interventions that foster functional recovery. **METHODOLOGY:** This is a narrative literature review based on the analysis of scientific articles from national and international databases, addressing neuroplasticity, stroke, and the roles of nursing and physical therapy in the rehabilitation process.

RESULTS AND DISCUSSION: Evidence shows that early, continuous, and individualized rehabilitation enhances neuroplasticity mechanisms and promotes functional recovery. Nursing contributes through clinical monitoring, complication prevention, health education, and the promotion of self-care, while physical therapy focuses on motor and functional recovery through interventions targeting muscle strengthening, balance, gait, and functional training. The integrated work of these professionals promotes more comprehensive care and improves the quality of the rehabilitation process. **FINAL CONSIDERATIONS:** Neuroplasticity plays a fundamental role in post-stroke recovery, and its stimulation relies on a structured multiprofessional approach. The integration of nursing and physical therapy fosters the recovery of functionality, the prevention of complications, and improved quality of life, underscoring the importance of therapeutic strategies based on scientific evidence.

Keywords: Stroke; Neuroplasticity; Rehabilitation; Nursing; Physical Therapy.

RESUMO

INTRODUÇÃO: O Acidente Vascular Encefálico (AVE) constitui uma

das principais causas de incapacidade funcional, podendo ocasionar déficits motores, cognitivos e sensoriais que comprometem a autonomia e a qualidade de vida. Nesse contexto, a neuroplasticidade representa um importante mecanismo de reorganização do sistema nervoso, sendo estimulada por intervenções terapêuticas capazes de favorecer a recuperação funcional. **METODOLOGIA:** Trata-se de uma revisão narrativa da literatura, realizada a partir da análise de artigos científicos publicados em bases de dados nacionais e internacionais, abordando a neuroplasticidade, o AVE e as atribuições da Enfermagem e da Fisioterapia no processo de reabilitação.

RESULTADOS E DISCUSSÃO: As evidências demonstram que a reabilitação precoce, contínua e individualizada potencializa os mecanismos de neuroplasticidade e favorece a recuperação funcional. A Enfermagem contribui por meio do monitoramento clínico, prevenção de complicações, educação em saúde e incentivo ao autocuidado, enquanto a Fisioterapia atua na recuperação motora e funcional por meio de intervenções direcionadas ao fortalecimento muscular, equilíbrio, marcha e treinamento funcional. A atuação integrada desses profissionais promove uma assistência mais abrangente e qualifica o processo de reabilitação.

CONSIDERAÇÕES FINAIS: A neuroplasticidade desempenha papel fundamental na recuperação pós-AVE, e sua estimulação depende de uma abordagem multiprofissional estruturada. A integração entre Enfermagem e Fisioterapia favorece a recuperação da funcionalidade, a prevenção de complicações e a melhoria da qualidade de vida, reforçando a importância de estratégias terapêuticas baseadas em evidências científicas.

Palavras-chave: Acidente Vascular Encefálico; Neuroplasticidade; Reabilitação; Enfermagem; Fisioterapia.

1. INTRODUCTION

A stroke (CVA) is one of the leading causes of morbidity, mortality, and functional disability worldwide, representing a significant public health problem. The disease occurs as a result of the interruption or rupture of cerebral blood flow, compromising the supply of oxygen and nutrients to nerve tissue, resulting in cell injury and death. Stroke can be classified as ischemic, when there is obstruction of blood flow due to thrombosis or embolism, or hemorrhagic, characterized by the rupture of an intracranial blood vessel. Although it can affect individuals of different age groups, its incidence is significantly higher among the elderly and people with cardiovascular risk factors, such as hypertension, diabetes mellitus, dyslipidemia, and atrial fibrillation (Silva; Carmo, 2023).

The sequelae resulting from stroke vary according to the extent and location of the brain lesion, and may compromise motor, sensory, cognitive, behavioral, and language functions. Among the most frequent manifestations are hemiparesis, balance disorders, gait difficulties, spasticity, loss of motor coordination, and limitations in performing activities of daily living, factors that directly impact the functional independence and quality of life of patients (Rodrigues; Mazzola, 2019).

In this scenario, neuroplasticity stands out as one of the main biological mechanisms involved in neurological recovery after stroke. Defined as the nervous system's ability to modify its structural and functional organization in response to internal or external stimuli, this property allows the establishment of new neural connections and the reorganization of damaged circuits. This process involves cellular, molecular, biochemical, and physiological adaptations,

including synaptic, axonal, dendritic, and regenerative plasticity, favoring the partial recovery of compromised functions and the adaptation of the organism to the limitations imposed by brain injury (Cirillo *et al.*, 2024).

The intensity of functional recovery is directly related to the ability to stimulate these neuroplastic mechanisms through early, individualized, and continuous therapeutic interventions. Evidence shows that repetitive motor stimuli, functional training, and targeted experiences enhance cortical reorganization, favoring the recovery of motor and cognitive functions. Thus, rehabilitation should begin as early as possible, respecting the patient's clinical stability and the particularities of each phase of recovery (Magalhães *et al.*, 2024).

In this context, Nursing plays an essential role during all stages of care for patients affected by stroke. In addition to the assistance provided in the acute phase, with clinical monitoring, medication administration, early identification of neurological changes, and prevention of complications, the nurse actively participates in the rehabilitation process. Their responsibilities include care planning, health education, guidance for families, encouragement of self-care, prevention of disabilities, and promotion of treatment continuity, contributing to functional recovery and improving the patient's quality of life (Silvia *et al.*, 2023).

In parallel, physiotherapy plays a crucial role in neurological rehabilitation, working to recover motor and functional abilities compromised by stroke. Based on clinical assessment, the physiotherapist establishes therapeutic approaches aimed at muscle strengthening, balance training, gait retraining, improvement of motor coordination, postural correction, and

development of functional skills. These interventions utilize principles of motor learning and repetition of specific tasks, promoting stimuli capable of favoring cortical reorganization and enhancing neuroplasticity mechanisms (Martins *et al.*, 2022; Gomes *et al.*, 2021).

Physiotherapeutic intervention can begin during hospitalization through therapeutic positioning, early mobilization, respiratory exercises, and postural control training, subsequently evolving into programs for muscle strengthening, gait training, balance, coordination, and functional activities developed in an outpatient or home setting. In addition to motor recovery, these interventions reduce the risk of secondary complications resulting from immobility, such as joint stiffness, muscle shortening, loss of strength, respiratory alterations, and falls, promoting greater functional independence and social reintegration (Nogueira, 2017; Lima, Conceição; Tapparelli, 2021).

The complexity of neurological sequelae resulting from stroke requires an integrated multidisciplinary approach, in which different areas of knowledge act in a complementary way. While Nursing focuses its efforts on continuous care, clinical monitoring, health education, and prevention of complications, Physiotherapy directs its interventions toward the recovery of functionality and motor performance. The integration of these practices enhances neuroplastic mechanisms, expands the possibilities of functional recovery, and provides more comprehensive, humanized, and patient-centered care (Vieira *et al.*, 2017).

Given the high prevalence of stroke and the importance of neuroplasticity as a mechanism responsible for functional recovery,

it becomes relevant to understand how Nursing and Physiotherapy interventions contribute to enhancing this process. Thus, this study aims to review the scientific literature on neuroplasticity after stroke, analyzing the roles of Nursing and Physiotherapy in patient rehabilitation, with an emphasis on therapeutic strategies capable of stimulating brain plasticity and promoting functional recovery.

2. METHODOLOGY

This study is characterized as a narrative literature review, developed with the objective of gathering and analyzing scientific evidence on neuroplasticity in stroke and the roles of nursing and physiotherapy in patient rehabilitation.

The bibliographic search was conducted between November and December 2025 in the PubMed, National Library of Medicine (NLM), and Google Scholar databases, as well as scientific journals in the health field. The following descriptors were used: "Neuroplasticity", "Brain plasticity", "Stroke", "Neurological rehabilitation", "Nursing in post-stroke rehabilitation", and "Physiotherapy in post-stroke rehabilitation".

Scientific articles and literature reviews published in Portuguese and English, preferably between 2011 and 2025, related to the proposed theme, were included. The selected publications were organized using Mendeley software and analyzed qualitatively, allowing the identification of key evidence on the mechanisms of neuroplasticity and the contributions of Nursing and Physiotherapy to the functional recovery and quality of life of patients affected by stroke.

3. RESULTS AND DISCUSSION

A stroke (CVA) is characterized by the interruption of cerebral blood flow, and can be classified as ischemic, resulting from vascular obstruction due to thrombosis or embolism, or hemorrhagic, caused by the rupture of an intracranial blood vessel. This condition compromises the supply of oxygen and nutrients to nerve tissue, causing cell death and neurological deficits of varying magnitudes. Among the main clinical manifestations are hemiparesis, speech alterations, facial asymmetry, cognitive deficits, and dysphagia. The diagnosis is based on clinical evaluation and imaging tests, while factors such as hypertension, dyslipidemia, smoking, sedentary lifestyle, and advanced age are among the main risk factors for the disease (Silva; Carmo, 2023; Silvia *et al.*, 2023).

The sequelae of stroke often compromise functional independence and quality of life, making rehabilitation an essential component of treatment. In this context, neuroplasticity represents the nervous system's ability to reorganize its structure and function in response to injury, through the formation and remodeling of neural connections. This process involves mechanisms such as synaptic, axonal, and dendritic plasticity, which favor the partial recovery of compromised functions (Chaves, 2023; Cirillo *et al.*, 2024).

Functional recovery depends on the provision of early, specific, and repetitive therapeutic stimuli capable of enhancing neuroplastic mechanisms. Thus, the integrated action of Nursing and Physiotherapy is fundamental during rehabilitation, since it combines clinical care, prevention of complications, and health education with interventions aimed at motor recovery, balance, gait, and functionality. This multidisciplinary approach contributes to greater autonomy, better functional performance, and quality of life for patients affected by stroke (Magalhães *et al.*, 2024).

3.1. The Window Of Neuroplasticity And Phases Of Recovery After Stroke

Functional recovery after a stroke is closely related to neuroplasticity mechanisms, defined as the nervous system's ability to reorganize its structure and function in response to brain injury. Although this process occurs throughout life, there is a period of greater responsiveness to therapeutic stimuli, known as the neuroplasticity window, in which the reorganization of neural networks is enhanced and favors the recovery of compromised functions (Py Laste *et al.*, 2024).

In this context, early rehabilitation is one of the main factors associated with functional recovery. The application of motor, sensory, and cognitive stimuli in a systematic, repetitive, and individualized way favors cortical reorganization, contributing to the recovery of mobility, functionality, and independence of the patient (Prigatano *et al.*, 2021).

Post-stroke recovery can be divided into three phases. The acute phase comprises the first few days after the event and prioritizes clinical stabilization, prevention of complications, and assessment of neurological deficits. In this stage, after the patient is stabilized, rehabilitation can be initiated through early mobilizations, therapeutic positioning, respiratory exercises, and initial motor stimuli, always according to the individual's clinical condition (Silvia *et al.*, 2023; Magalhães *et al.*, 2024).

The subacute phase, corresponding to the first weeks and months after the stroke, represents the period of greatest potential for functional recovery, due to the greater responsiveness of the

nervous system to therapeutic stimuli. During this period, rehabilitation programs based on muscle strengthening, functional training, postural control, balance, motor coordination, and gait retraining promote important clinical and functional gains (Magalhães *et al.*, 2024).

In the chronic phase, although the speed of recovery is reduced, the neuroplasticity mechanisms remain active and can be stimulated by continuous and individualized interventions. Maintaining treatment at this stage helps preserve functional gains, prevent secondary complications, reduce limitations, and promote independence in activities of daily living, reinforcing the importance of continued multidisciplinary care throughout the entire rehabilitation process (Magalhães *et al.*, 2024).

3.2. Clinical Manifestations And Motor Impairment In Stroke

The clinical manifestations of stroke vary according to the location and extent of the brain lesion, and may compromise motor, sensory, cognitive, and communication functions. In general, symptoms have a sudden onset and include altered level of consciousness, motor deficits, speech disorders, sensory changes, facial paralysis, and spasticity, conditions that directly impact the patient's functionality and quality of life (Martins *et al.*, 2016; Piassaroli *et al.*, 2012).

Motor impairment represents one of the main sequelae of stroke and can manifest as paresis, characterized by reduced muscle strength, or plegia, defined as complete loss of voluntary movements. These alterations can affect a single limb (monoplegia), one side of the body (hemiplegia), or all four limbs (quadriplegia), depending on the area of the brain affected. Identifying the pattern

of motor impairment is essential to establish the functional prognosis and guide therapeutic planning (Gomes Cancela, 2008; Thinen; Tsukimoto; Tsukimoto, 2016; Dutra *et al.*, 2017; Marques *et al.*, 2019).

In order to synthesize the main clinical manifestations and types of motor impairment observed after stroke, Table 1 presents their characteristics and functional repercussions.

Table 1. Main clinical manifestations and motor impairments observed in patients affected by stroke.

Clinical manifestation	Characteristics	Main functional repercussions
Hemiparesis/Hemiplegia	Partial reduction or complete loss of movement on one side of the body.	Impaired gait, balance, motor coordination, and ability to perform activities of daily living.
Monoplegia	Motor impairment restricted to a single upper or lower limb.	Localized functional limitation, especially when it affects the dominant limb.
Quadriplegia (Tetraplegia)	Motor impairment in all four limbs due to extensive brain lesions.	High degree of functional dependence and need for continuous assistance.
Speech disorders	Dysarthria, aphasia, and difficulties in understanding or expressing language.	Impairment of communication, social interaction, and autonomy.
Sensory changes	Hypoesthesia, anesthesia and paresthesia.	Reduced sensory perception, increasing the risk of injuries and falls.

Spasticity	Increased muscle tone associated with involuntary muscle contraction.	Restricted range of motion, postural changes, and functional limitations.
Facial paralysis	Facial asymmetry and difficulty in moving the facial muscles.	Changes in facial expression, feeding, swallowing, and communication.
Altered level of consciousness	Drowsiness, mental confusion, or decreased level of consciousness.	This indicates greater clinical severity and a need for continuous monitoring.

Source: Prepared by the authors based on Gomes Cancela (2008); Thinen, Tsukimoto e Tsukimoto (2016); Piassaroli *et al.* (2012); Martins *et al.* (2016); Dutra *et al.* (2017); Marques *et al.* (2019); Zilli, Lima e Kohler (2014).

The clinical manifestations of stroke exhibit high variability depending on the location and extent of the brain lesion, significantly impacting the patient's functional capacity and autonomy. Motor deficits, especially hemiparesis and hemiplegia, are the most frequent sequelae and are directly associated with reduced mobility, balance, and the performance of activities of daily living (Gomes Cancela, 2008; Thinen; Tsukimoto; Tsukimoto, 2016). In addition, sensory alterations, speech disorders, spasticity, and facial paralysis can compromise communication, social interaction, and increase the risk of complications, reinforcing the need for a comprehensive clinical evaluation (Martins *et al.*, 2016; Piassaroli *et al.*, 2012; Zilli; Lima; Kohler, 2014).

In this context, early recognition of these manifestations allows for the planning of individualized interventions and promotes better functional outcomes. The integrated work of Nursing and

Physiotherapy is fundamental throughout the rehabilitation process, since continuous monitoring, prevention of complications, and implementation of strategies aimed at motor and functional recovery contribute to enhancing neuroplasticity mechanisms and promoting greater independence and quality of life for patients affected by stroke (Marques *et al.*, 2019; Giani; Mariana; Lima, 2019).

3.3. The Role Of Nursing And Physiotherapy In Post-Stroke Rehabilitation

Rehabilitation of patients affected by stroke requires multidisciplinary interventions aimed at recovering impaired functions and preventing secondary complications. Due to the diversity of motor, sensory, cognitive, and functional sequelae, treatment must be individualized and initiated early, respecting the patient's clinical condition. In this context, Nursing and Physiotherapy play complementary roles throughout all phases of rehabilitation, contributing to functional recovery and improved quality of life (Ribeiro *et al.*, 2021; Lopes; Pinheiro; Sousa, 2025).

In addition to clinical management, both professions work to continuously stimulate functionality through interventions capable of promoting neuroplasticity mechanisms. While Nursing continuously monitors the patient, preventing complications and promoting health education, Physical Therapy focuses its interventions on motor and functional recovery, using specific exercises and training geared towards activities of daily living (Cabrita *et al.*, 2024; Barros *et al.*, 2014).

In order to synthesize the main responsibilities of these professionals during post-stroke rehabilitation, Table 2 presents the interventions

developed by Nursing and Physical Therapy and their respective therapeutic objectives.

Table 2. Main responsibilities of Nursing and Physiotherapy in the rehabilitation of patients after a stroke.

Areas of expertise:	Nursing	Physiotherapy
Initial assessment	Neurological monitoring, vital signs, application of clinical scales, and systematization of nursing care.	Assessment of function, motor skills, posture, balance, gait, and functional capacity.
Prevention of complications	Prevention of pressure injuries, dysphagia, aspiration, falls, infections, and continuous clinical monitoring.	Prevention of contractures, joint stiffness, muscle weakness, respiratory complications, and functional limitations resulting from immobility.
Functional recovery	Encouraging self-care, assisting with activities of daily living, and promoting safe mobility.	Muscle strengthening, gait training, balance, motor coordination, postural control, and functional training.
Health education	Guidance for patients and their families regarding medications, home care, prevention of future events, and self-care.	Guidance regarding home exercises, positioning, transfers, and environmental adaptations.
Neuroplasticity	Continuous stimulation during daily care, encouraging mobility and active participation of the patient in rehabilitation.	Repetitive exercises, guided tasks, functional practice, and motor training aimed at cortical reorganization.

Common goal	Promoting autonomy, preventing complications, functional recovery, and improving quality of life.	Promoting autonomy, restoring functionality, and reintegrating individuals into activities of daily living.
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Source: Prepared by the authors based on Ribeiro *et al.* (2021); Oliveira, Garanhani e Garanhani (2011); Barros *et al.* (2014); Rodrigues *et al.* (2021); Cabrita *et al.* (2024); Lopes, Pinheiro e Sousa (2025); Dornellas *et al.* (2025); Gao *et al.* (2023); Lima *et al.* (2024); Magalhães *et al.* (2024).

The interventions presented in Table 2 demonstrate that post-stroke rehabilitation depends on the integration of different therapeutic strategies. Nursing acts continuously in clinical monitoring, prevention of complications, health education, and encouragement of self-care, while Physical Therapy directs its interventions towards the recovery of functionality through motor training, balance, gait, and postural control (Ribeiro *et al.*, 2021; Cabrita *et al.*, 2024; Lopes; Pinheiro; Sousa, 2025).

Although they have specific competencies, both areas share the goal of promoting functional independence and the patient's reintegration into their daily activities. Repetition of functional tasks, motor and sensory stimulation, and active patient participation during rehabilitation favor neuroplasticity mechanisms, enabling the reorganization of neural networks and contributing to the recovery of functions compromised by stroke (Barros *et al.*, 2014; Magalhães *et al.*, 2024; Dornellas *et al.*, 2025). Therefore, an interdisciplinary approach strengthens the comprehensiveness of care and expands the possibilities for functional recovery and improved quality of life.

4. FINAL CONSIDERATIONS

This review showed that neuroplasticity plays a fundamental role in the functional recovery of patients affected by stroke, constituting an important mechanism for the reorganization of the nervous system after injury. In this context, the integrated action of Nursing and Physiotherapy has proven indispensable to enhance this process, through interventions aimed at restoring functionality, preventing complications, and promoting patient autonomy.

The evidence analyzed demonstrates that rehabilitation should be initiated early and maintained continuously, respecting the clinical and functional needs of each individual. Interventions based on early mobilization, functional training, muscle strengthening, gait retraining, health education, and clinical monitoring favor neural reorganization and contribute to improving functional independence and quality of life.

The integrated action of Nursing and Physiotherapy constitutes one of the main pillars of post-stroke rehabilitation, as it combines care, therapeutic interventions, and health education, favoring neuroplasticity, functional recovery, and the quality of life of patients. In addition, the development of new research is fundamental to expanding scientific evidence and improving rehabilitation strategies.

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REFERENCES

BARROS, Arthur Flávio de Siqueira *et al.* Análise de Intervenções Fisioterapêuticas na Qualidade de Vida de Pacientes Pós-AVC.

Revista Neurociências, v. 22, n. 2, p. 308–314, 30 jun. 2014.

BERTYLLY, C.; RAQUEL, M.; CAVALCANTI, A. S. Aplicação da classificação internacional de funcionalidade (CIF) na avaliação da função, incapacidade e participação de indivíduos acometidos por patologias neurológicas em um centro de reabilitação de alta complexidade da cidade do Recife. **Fps.edu.br**, 2022.

CABRITA, Alexandra Isabel Santos; LOBO, Alexandra Filipa Rosa; VAZ, Abibo Manuel. PAPEL DO ENFERMEIRO DE REABILITAÇÃO NO PROCESSO DE RECUPERAÇÃO E NA QUALIDADE DOS CUIDADOS PRESTADOS À PESSOA PÓS-AVC. **Revista Ibero-Americana de Humanidades, Ciências e Educação**, [S. l.], v. 10, n. 11, p. 5447–5458, 2024. DOI: 10.51891/rease.v10i11.16951.

CAIRE, Michael J.; REDDY, Vamsi; VARACALLO, Matthew A. Physiology, Synapse. **StatPearls**, 27 mar. 2023.

CHAVES, José Mário. Neuroplasticidade, memória e aprendizagem: Uma relação atemporal. **Revista Psicopedagogia**, v. 40, n. 121, p. 66–75, 2023.

CIRILLO, Milena Solti *et al.* O Upgrade do Cérebro: Neuroplasticidade e Neurotecnologia. **Brazilian Journal of Implantology and Health Sciences**, v. 6, n. 4, p. 1834–1863, 19 abr. 2024.

CRISTINA GOMES FREITAS, Erika de; XAVIER SOUSA, Railândia de; CATUNDA GOMES MENEZES, Luciana de. Assistência de enfermagem ao paciente com acidente vascular cerebral atendidos nas unidades hospitalares: uma revisão integrativa. **Brazilian Journal of Surgery and Clinical Research-BJSCR**, v. 47, n. 2, p. 2317–4404.

DAS CHAGAS, Júlio Cesar; DA SILVA, Luciana Maria Nascimento. A atuação da equipe multiprofissional na reabilitação do paciente com acidente vascular cerebral: relato de experiência. **Revista Sustinere**, v. 9, 8 out. 2021.

DORNELLAS, Rebeca *et al.* NEUROPLASTICIDADE EM PACIENTES PÓS AVC: MECANISMOS E ESTRATÉGIAS DE REABILITAÇÃO. **Anais Colóquio Estadual de Pesquisa Multidisciplinar (ISSN-2527-2500)**, 22 set. 2025.

DUTRA, Michelinne Oliveira Machado *et al.* Fatores sociodemográficos e capacidade funcional de idosos acometidos por acidente vascular encefálico. **Revista Brasileira de Epidemiologia**, v. 20, n. 1, p. 124–135, mar. 2017.

GAO, Ming Ming *et al.* The effects of evidence-based nursing interventions on pressure ulcers in patients with stroke: a meta-analysis. **International Wound Journal**, v. 20, n. 10, p. 4069–4076, 1 dez. 2023.

GANI, S.; MARIANA, R.; LIMA. Comprometimento funcional de adultos com acidente vascular encefálico segundo a classificação internacional de funcionalidade, incapacidade e saúde. **Asces.edu.br**, 2019.

GOMES CANCELA, Diana Manuela. O acidente vascular cerebral: classificação, principais consequências e reabilitação. **Universidade Lusíada do Porto**, 2008. Disponível em: www.psicologia.com.pt.

GOMES, A. C. *et al.* Atuação da fisioterapia no tratamento de pacientes com acidente vascular encefálico (AVE). **Scientia Generalis**, v. 2, n. Supl. 1, p. 64–64, 2021.

JIN, Zheng *et al.* Effects of Systemic Rehabilitation Nursing Combined with WeChat Publicity and Education on the Early Cognitive Function and Living Quality of the Patients with Cerebral Arterial Thrombosis. **Journal of healthcare engineering**, v. 2022, 2022.

LASTE, A. P. *et al.* Neuroplasticidade e reabilitação neurológica. In: Neurologia: Diagnósticos, Tratamentos e Cirurgias. **Editora Pasteur** v. 5, p. 51–63, 2024.

LIMA, J. B.; CONCEIÇÃO, N. M. P.; TAPPARELLI, Y. de A. A fisioterapia motora no processo de reabilitação do acidente vascular encefálico. **Revista Saúde e Desenvolvimento**, v. 15, n. 23, p. 87–95, 2021.

LIMA, Livia Gabriele de Paula *et al.* Cuidados de enfermagem no pós-alta hospitalar de acidente vascular encefálico: uma revisão integrativa de literatura explorando estratégias de cuidados de enfermagem no pós-alta hospitalar de acidente vascular encefálico em pacientes. 15 mar. 2024.

LOPES, Raí da Silva; PINHEIRO, Eudaldo Alves; SOUSA, Lucas Gabriel Oliveira. O papel da fisioterapia na reabilitação pós acidente vascular cerebral (AVC). **ARACÊ**, v. 7, n. 7, p. 36701–36717, 8 jul. 2025.

LOUREIRO, M. E. M.; PAIVA, K. T. P.; SANTOS, J. L. dos. O PAPEL DO ENFERMEIRO NA REABILITAÇÃO DE PACIENTES COM ACIDENTE VASCULAR CEREBRAL ISQUÊMICO: REVISÃO INTEGRATIVA. **REVISTA FOCO**, [S. l.], v. 18, n. 6, p. e8580, 2025. DOI: 10.54751/revistafoco.v18n6-015.

MAGALHÃES, Vanessa *et al.* Neuroplasticidade e recuperação funcional pós-AVE: uma revisão de literatura. **Periódicos Brasil**.

Pesquisa Científica, v. 3, n. 2, p. 1916–1921, 17 set. 2024.

MARQUES, Jessica Carla *et al.* Perfil de pacientes com sequelas de acidente vascular cerebral internados em um centro de reabilitação.

Acta Fisiátrica, v. 26, n. 3, 30 set. 2019.

MARTINS, Bárbara *et al.* Fisioterápica de pacientes com sequelas motoras de acidente vascular cerebral isquêmico: uma revisão bibliográfica. **Revista Inspirar: Movimento & Saúde Reabilitação**, 4 nov. 2016.

NOGUEIRA, F. Intervenção fisioterapêutica na comunidade: relato de caso de uma paciente com AVE. **Saúde.com**, v. 1, n. 1, p. 35–43, 2017.

OLIVEIRA, Barbara Campos de; GARANHANI, Mara Lúcia; GARANHANI, Márcia Regina. Cuidador de pessoa com acidente vascular encefálico: necessidades, sentimentos e orientações recebidas. **Acta Paulista de Enfermagem**, v. 24, n. 1, p. 43–49, 2011.

PIASSAROLI, Cláudia Araújo de Paula *et al.* Modelos de Reabilitação Fisioterápica em Pacientes Adultos com Sequelas de AVC Isquêmico. **Revista Neurociências**, v. 20, n. 1, p. 128–137, 31 mar. 2012.

PRIGATANO, George P. *et al.* Neuropsychological rehabilitation, neuroimaging and neuroplasticity: A clinical commentary. **NeuroRehabilitation**, v. 49, n. 2, p. 255–265, 24 set. 2021.

PY LASTE, Antônio *et al.* NEUROPLASTICIDADE E REABILITAÇÃO NEUROLÓGICA. *In: NEUROLOGIA: Diagnósticos, Tratamentos e Cirurgias - Edição V.* [S.l.]: Guilherme Barroso L. De Freitas, 2024. p. 51–63.

RIBEIRO, Maria Caroline Andrade *et al.* Assistência de enfermagem ao paciente com Acidente Vascular Encefálico. **Revista Enfermagem Atual In Derme**, [S. l.], v. 95, n. 34, p. e-021091, 2021. DOI: 10.31011/readid-2021-v.95-n.34-art.1001.

RODRIGUES, Gabriela Conterno; MAZZOLA, Daiane. Fisioterapia em grupo na reabilitação de indivíduos pós acidente vascular encefálico (AVE). **Vivências**, v. 15, n. 28, p. 245–254, 15 jun. 2019.

RODRIGUES, Mayra Silva *et al.* A influência do treino de equilíbrio na reabilitação da marcha em pacientes pós-AVE. **Revista Ibero-Americana de Humanidades, Ciências e Educação**, v. 7, n. 9, p. 357–377, 30 set. 2021.

SILVA, Eveline Michelle Lima da *et al.* Pacientes sequelados por acidente vascular encefálico em cuidado domiciliar: caracterização de um grupo de doentes e cuidadores. **Brazilian Journal of Health Review**, v. 4, n. 2, p. 5921–5934, 18 mar. 2021.

SILVA, Raissa Carmem Sousa; CARMO, Monique Santos do. Acidente vascular cerebral: fisiopatologia e o papel da atenção primária à saúde. **Revista de Estudos Multidisciplinares UNDB**, v. 3, n. 3, 28 dez. 2023.

SILVIA, Lucianne *et al.* Assistência de enfermagem em pacientes com acidente vascular cerebral em reabilitação. **Brazilian Journal of Development**, v. 9, n. 6, p. 19204–19217, 6 jun. 2023.

THAU, Lauren; REDDY, Vamsi; SINGH, Paramvir. Anatomy, Central Nervous System. **BMJ**, v. 1, n. 4293, p. 478–478, 10 out. 2022.

THINEN, Natalia Cristina; TSUKIMOTO, Denise Rodrigues; TSUKIMOTO, Gracinda Rodrigues. Functional evaluation of hemiplegic patients post-stroke using the Disabilities of the Arm, Shoulder and Hand - DASH questionnaire. **Acta Fisiátrica**, v. 23, n. 1, 2016.

TORRESINI, Beatriz Mateus; HAMDAN, Leticia; MARTINS, Wesley. Atuação da enfermagem na assistência ao paciente com acidente vascular encefálico em unidades de emergência e internação. **E-Acadêmica**, v. 6, n. 3, p. e0663661–e0663661, 14 nov. 2025.

VIEIRA, Daiana Cristina Dessuy *et al.* Reabilitação de acidente vascular encefálico: revisão de literatura. **Revista de Atenção à Saúde**, v. 15, n. 52, p. 89–95, 17 ago. 2017.

ZILLI, Francielly; LIMA, Cristine Budal Arins de; KOHLER, Maria Cecilia. Neuroplasticidade na reabilitação de pacientes acometidos por AVC espástico. **Revista de Terapia Ocupacional da Universidade de São Paulo**, v. 25, n. 3, p. 317, 19 dez. 2014.

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