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Stroke

Current Awareness Bulletin

July 2025

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  Next sessions: 12th August @ 9am, 10th September @ 10am & 2nd October @ 11am

Book a session today at https://forms.office.com/e/HyiSXfDaYV (these sessions will be held on a monthly basis)

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1. **Optimizing non-invasive vagus nerve stimulation for treatment in stroke**

Authors: Baig, Sheharyar S.;Dorney, Samantha;Aziz, Mudasar;Bell, Simon M.;Ali, Ali N.;Su, Li;Redgrave, Jessica N. and Majid, Arshad

Publication Date: 2025

Journal: Neural Regeneration Research

Abstract: Stroke remains a leading cause of long-term disability worldwide. There is an unmet need for neuromodulatory therapies that can mitigate against neurovascular injury and potentially promote neurological recovery. Transcutaneous vagus nerve stimulation has been demonstrated to show potential therapeutic effects in both acute and chronic stroke. However, previously published research has only investigated a narrow range of stimulation settings and indications. In this review, we detail the ongoing studies of transcutaneous vagus nerve stimulation in stroke through systematic searches of registered clinical trials. We summarize the upcoming clinical trials of transcutaneous vagus nerve stimulation in stroke, highlighting their indications, parameter settings, scope, and limitations. We further explore the challenges and barriers associated with the implementation of transcutaneous vagus nerve stimulation in acute stroke and stroke rehabilitation, focusing on critical aspects such as stimulation settings, target groups, biomarkers, and integration with rehabilitation interventions. (Copyright © 2025 Neural Regeneration Research.)

2. **Safety and efficacy of fluoxetine in post-stroke anxiety: A pilot prospective randomized open blinded endpoint (PROBE) study**

Authors: Barki, Satish;Vibha, Deepti;Pachipala, Sudhir;Tayade, Kamalesh;Misra, Shubham;Nath, Manabesh;Singh, Rajesh Kumar and Kumar, Nand

Publication Date: 2025

Journal: International Journal of Psychiatry in Medicine

Abstract: Objective: The prevalence of post-stroke anxiety (PSA) is reported to be 20%–25%. There is insufficient evidence on the efficacy of antidepressants for treating anxiety in such patients. This Prospective Randomized Open Blinded Endpoint (PROBE) study was designed to assess the safety and efficacy of fluoxetine in PSA. Methods: In this single-center pilot study conducted in India, post-stroke patients (1-6 months after stroke) were randomized to fluoxetine (intervention group: 20 mg/ day for 12 weeks) or standard medical care (control group). The primary outcome was improvement in the Hamilton Anxiety Rating Scale (HAM-A) at 12 weeks. The secondary outcomes were anxiety remission (>50% improvement in HAM-A), modified Rankin Scale (mRS), Barthel Index (BI), quality of life (SF-36), and Hamilton Depression Rating Scale (HAM-D). A linear regression analysis was done for determinants of HAM-A to account for baseline differences in the intervention and control groups. Results: A total of 60 patients were randomized (30 to the intervention group, 30 to the control group). The overall prevalence of post-stroke anxiety among participants in the study was 50.8%, and 31.5% experienced both anxiety and depression. The average HAM-A score at baseline was 11, and average follow-up score at study conclusion was 4. There was similar improvement in the HAM-A score at 12 weeks post-randomization in the intervention and control groups fluoxetine: −8.0 (95% CI = −11.0 to −4.0); control: −7.0 (95% CI = −9.5 to −4.0); p = 0.91]. Likewise, there was no significant difference between intervention and control groups at 12 weeks post-randomization on the mRS, BI, SF-36, or HAM-D. There were no serious adverse events in either group during the study. Conclusion: Fluoxetine and standard medical care had comparable improvement in HAM-A in post-stroke patients with mild anxiety at 12 weeks. Further study of the pharmacological treatment of post-stroke patients with more severe anxiety is needed. Clinical trial registration: CTRI/2018/12/016568.

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3. **Machine learning prediction models for stroke-associated pneumonia:Meta-analysis**

Authors: Cao, Yi;Zeng, Xi;Gou, Yangyang;Lu, Yu;Zhu, Dian;Wang, Hui;Dai, Yan;Tian, Jie;Jian, Liu and Min, Peng

Publication Date: 2025

Journal: Computers in Biology and Medicine

Abstract: Competing Interests: Declaration of competing interest No conflict of interest has been declared by the authors.; Objective: The heterogeneity of machine learning (ML) models predicting the risk of stroke-associated pneumonia (SAP) is considerable. This study aims to conduct a meta-analysis and comparison of published ML models that predict SAP risk.; Methods: A systematic search was conducted across eight databases, covering the period

from their inception to August 16, 2024. Data extraction was performed based on the Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies (CHARMS) framework. The Assess the Risk of Bias and Applicability of Prediction Model (PROBAST) tool was used to evaluate the risk of bias and applicability of the included models. Descriptive analysis was performed on the included studies, and Meta-Disc 1.4 and Stata 14.0 software were used for sensitivity analysis, subgroup analysis, and meta-regression.; Results: A total of 18 studies comprising 46 SAP risk prediction models were included. The overall Area Under the Curve (AUC) was 0.8623, with a pooled sensitivity of 0.77 (95 % CI: 0.76-0.77, P < 0.001, I 2 = 94.7 %) and a pooled specificity of 0.75 (95 % CI: 0.74-0.75, P < 0.001, I 2 = 99.1 %). Logistic regression (LR) was the most commonly used ML method for SAP prediction, with an AUC of 0.8684, sensitivity of 0.77 (95 % CI: 0.75-0.78, P < 0.001, I 2 = 94.7 %), and specificity of 0.74 (95 % CI: 0.73-0.74, P < 0.001, I 2 = 98.6 %). In contrast, non-LR models had an AUC of 0.8591, sensitivity of 0.77 (95 % CI: 0.76-0.78, P < 0.001, I 2 = 94.9 %), and specificity of 0.75 (95 % CI: 0.75-0.75, P < 0.001, I 2 = 99.3 %). Sensitivity analysis indicated that the random-effects meta-analysis yielded an AUC of 0.8476, sensitivity of 0.77 (95 % CI: 0.76-0.78, P < 0.001, I 2 = 93.5 %), and specificity of 0.72 (95 % CI: 0.72-0.72, P < 0.001, I 2 = 98.1 %). Meta-regression analysis revealed that country/region, ML algorithms, participants, year, study source, and study design were not sources of heterogeneity (P = 0.183).; Conclusion: In the existing SAP prediction models, the LR model demonstrates relatively better prediction performance due to its good interpretability and adaptability to smaller sample sizes. However, there are significant limitations in the current research: the overall bias risk of the models is relatively high, the variable handling methods are inconsistent, and there is a scarcity of prediction studies for patients with hemorrhagic stroke. Moreover, the models generally lack external validation, which limits their clinical generalization ability. Future research should conduct prospective, multi-center data studies and carry out internal and external validations to enhance reliability. Strictly following the requirements of CHARMS and PROBAST will effectively reduce the bias risk, enhance the validation efficacy of the models and the clinical translation value.

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4. **Social network intervention to improve blood pressure control after stroke: The TEAMS-BP randomized clinical trial**

Authors: Dhand, Amar;Crum, Katherine;Hanken, Kaitlin E.;Bhatkhande, Gauri;Luo, Melinda;Corbin, Ian M.;Usmanov, George;Rothfeld-Wehrwein, Zachary;Dhongade, Vrushali;Lin, David;Slocum, Chloe;Haff, Nancy and Choudhry, Niteesh K.

Publication Date: 2025

Journal: Social Science & Medicine

Abstract: Social connections play an important role in predicting health outcomes after a stroke. In the context of clinical medicine, a social network theory proposes that each patient is embedded in a personal social network of interpersonal connections that provide social support, information, and behavioral cues. However, the effectiveness of activating and harnessing supportive personal social networks remains uncertain, particularly within healthcare situations where individualism prevails. As an initial step towards developing interventions for healthier social networks in clinical practice, we conducted a randomized

controlled trial in stroke survivors. This trial compared a network intervention versus individual counseling for 3 months with the aim of lowering blood pressure after stroke. Over 2 years, we recruited 45 stroke survivors, with 24 assigned to the network intervention and 21 to the individual counseling group. Results indicated no significant difference in the primary outcome of absolute systolic blood pressure difference over 3 months between the two groups. However, subgroup analyses revealed that patients within small and close-knit networks, known as high constraint networks, who received the network intervention had a significantly larger reduction in blood pressure than patients within large and open, low constraint, networks. The study's findings are preliminary due to dropout rates in both arms, and variable engagement of network members in the intervention arm. Nevertheless, our results suggest the potential of leveraging social networks to enhance health outcomes in specific subgroups of stroke survivors, highlighting avenues for further research and intervention development. Clinical Trial Unique Identifier: NCT05258890. • Personal networks shape health outcomes in stroke survivors. • There was no overall benefit of a network intervention without targeting network type. • However, the intervention did lower blood pressure in patients with close-knit networks. • Mapping networks can help personalize stroke recovery strategies.

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5. **A feasibility randomized-controlled trial of an executive functioning telerehabilitation intervention for stroke survivors**

Authors: Ene, Crina Georgiana;Gracey, Fergus and Ford, Catherine

Publication Date: 2025

Journal: Brain Injury

Abstract: Background: Executive dysfunction affects most stroke survivors, limiting their ability to adapt post-stroke. Despite clinical guidelines recommending executive functioning rehabilitation, robust evidence for interventions is lacking. Aims: This study assessed the feasibility and acceptability of an executive functioning telerehabilitation intervention for stroke survivors. It examined recruitment and retention rates, adherence, completion of outcome measures, intervention usability, and participant experience. Preliminary changes in executive functioning, self-efficacy, and wellbeing were explored to inform the design of a future efficacy trial. Methods: A feasibility randomized-controlled trial was conducted with 19 adult stroke survivors randomized to receive either an executive functioning telerehabilitation intervention or stroke psychoeducation. Interventions were two 30-minute videos with accompanying homework delivered asynchronously over two weeks. Outcome measures validated in stroke populations assessed executive functioning, wellbeing, and self-efficacy at baseline, post-intervention, and one-month follow-up. Feedback was collected on usability and acceptability. Results: Recruitment and drop-out rates were acceptable. Participants indicated that both interventions were acceptable, relevant, useful, and easy to engage with, though some found the homework tasks challenging. Conclusion: The executive functioning and psychoeducation interventions are feasible and acceptable for research. A larger RCT is needed to evaluate efficacy, retaining multiple recruitment sources, including public healthcare services, for representative samples. ClinicalTrials Registration: NCT05461937.

6. **Identification of Risk Factors and Development of Prediction Models for Glasgow Coma Scale Score Deterioration in Stroke Patients: A Study Based on the MIMIC-IV Database**

Authors: Fan, Xuehui;Xu, Jing;Ye, Ruixue;Zhao, Jingpu and Wang, Yulong

Publication Date: 2025

Journal: Journal of Intensive Care Medicine

Abstract: Competing Interests: Declaration of Conflicting InterestsThe authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.; ObjectiveStroke remains a major cause of mortality and disability worldwide. This study aims to identify the risk factors associated with Glasgow Coma Scale (GCS) deterioration in stroke patients using data from the MIMIC-IV database.MethodsWe conducted a retrospective cohort study based on the MIMIC-IV database, involving 1984 adult stroke patients. The main exposure variables included age, Charlson Comorbidity Index (CCI), and Sequential Organ Failure Assessment (SOFA) score. The outcome variable was GCS deterioration during hospitalization. Covariates included demographic information, comorbidities, and laboratory indicators. Multivariate logistic regression models were used to analyze risk factors.ResultsEach 1-point increase in SOFA score was associated with a 50.69% increased risk of GCS score deterioration (OR = 1.5069, 95% CI: 1.2641-1.7964, P < .0001). Each year increase in age was associated with a 24.19% increased risk (OR = 1.2419, 95% CI: 1.0496-1.4695, P = .0116). Each 1 mEq/L increase in minimum anion gap was associated with a 24.56% increased risk (OR = 1.2456, 95% CI: 1.0076-1.5398, P = .0424). Risk factors varied significantly among disease subtypes.ConclusionSOFA score, age, and anion gap are important predictors of GCS score deterioration in patients with neurological diseases. These findings may help identify high-risk patients early and optimize treatment strategies.

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7. **Electroencephalography: A valuable tool for assessing motor impairment and recovery post-stroke**

Authors: Feng, Jinru;Jia, Weili and Li, Zixiao

Publication Date: 2025

Journal: Journal of Neuroscience Methods

Abstract: Competing Interests: Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.; Stroke is a leading cause of adult disability, and restoring motor function post-stroke is critical to improving the well-being and quality of life of affected individuals. Accurate and timely assessment of motor function is essential for developing effective rehabilitation strategies and predicting recovery outcomes. Electroencephalography (EEG) offers a non-invasive, real-time monitoring of brain activity, offering personalized insights into motor impairment and recovery. Its simplicity and bedside

applicability make EEG a valuable tool and a potential biomarker for brain function. In recent years, the integration of EEG with the brain-computer interface technology and neuromodulation techniques has revolutionized personalized rehabilitation therapy, offering new hope for patients with motor dysfunction following stroke. This review synthesizes evidence on EEG-derived biomarkers and their integration with brain-computer interface and neuromodulation techniques, proposing a framework for personalized rehabilitation strategies in stroke recovery.

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8. **Factors associated with upper extremity use after stroke: a scoping review of accelerometry studies**

Authors: Gagné-Pelletier, Léandre;Poitras, Isabelle;Roig, Marc and Mercier, Catherine

Publication Date: 2025

Journal: Journal of NeuroEngineering & Rehabilitation (JNER)

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9. **Optimizing a Nurse-Led Receptive Music Therapy (FEMT) Process to Improve Depression Symptoms Among Individuals With a History of Stroke: The Development of an Evidence-Based Complex Intervention Using the MRC Framework**

Authors: Gao, Jing;Bai, Dingxi;Chen, Huan;You, Qian;Chen, Xinyu;Lu, Xianying;Ji, Wenting and Hou, Chaoming

Publication Date: 2025

Journal: Nursing & Health Sciences

Abstract: Chinese traditional five-element music therapy (FEMT), a receptive music therapy, has remarkable effect in intervening depression symptoms among individuals with a history of stroke, yet its content for depression is often unclear. We aim to construct an evidence-based complex intervention by MRC Framework. We first established 10-person program. Then, guided by the "Clinical Training Guide for Music Therapists" theoretical framework and informed by the findings of semi-structured interviews for interview clinical medical staff including doctors and nurses, six topics were determined. Subsequent, evidence from two parts was classified and synthesized, forming 17 recommendations (15 A-level, 2 B-level). After content validity assessment, a final program with six themes of 19 items for pilot departments was developed. Finally, we compiled potentially feasible and important implementation strategies. The results offer a clear specification of the FEMT intervention for depression, providing basis for the next step of transformation and application of five-element music in clinical practice. Since our research was carried out in the Chinese context, we emphasize the need for further research to explore the applicability of our intervention in diverse cultural settings. Trial Registration: ClinicalTrials.gov identifier: ChiCTR2100053737. (© 2025 John Wiley & Sons Australia, Ltd.)

10. **Analysis of factors influencing poor neurological outcomes in patients with acute ischemic stroke**

Authors: Hong, Xian-Chai;Shu, Mei-Chun;Bao, Shao-Rui;Chen, Si-Yan;Weng, Yi-Xin and Lin, Sui-Li

Publication Date: 2025

Journal: Annals of Medicine

Abstract: Objective: There is a gap in understanding how post-stroke fatigue influences neurological function, motor skills, and the overall quality of life in different regions. This study aimed to investigate the association between post-stroke fatigue and poor prognosis of neurological function in patients with acute ischemic stroke (AIS).; Methods: This study conducted a retrospective investigation. A total of 242 acute ischemic stroke patients were admitted to the Department of Neurology of our hospital from January 2018 to December 2019. Clinical information upon patient admission was collected, including general patient information, Fatigue Severity Scale (FSS) score, National Institutes of Health Stroke Scale (NIHSS) score, modified Rankin Scale (mRS) score at discharge, and follow-up assessments of one-year post-discharge. The impact of post-stroke fatigue on functional recovery at discharge and one year after discharge was analyzed. Clinical data were analyzed using statistical methods, including the Mann-Whitney U test, nonparametric rank-sum tests, chi-square, Fisher's exact tests, and binary logistic regression.; Results: Binary logistic regression showed that per capita monthly income at discharge (≥5001, OR = 0.064, 95%CI: 0.005-0.842), NIHSS score (OR = 26.676, 95%CI: 8.218-86.590), and FSS score (OR = 1.085, 95%CI: 1.023-1.185) had an impact on functional recovery ($p < 0.05$). One year after discharge, the NIHSS score (OR = 5.043, 95%CI: 3.252-7.820) and FSS score (OR = 1.106, 95%CI: 1.029-1.188) were also found to have an impact on functional recovery ($p < 0.05$).; Conclusion: The prevalence of fatigue in patients with acute ischemic stroke is high, and post-stroke fatigue affects the functional recovery of patients both at discharge and 1 year after discharge.

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11. **Combining low-technology augmentative and alternative communication with regular aphasia treatment: interim findings of a hospital-based RCT in post-stroke patients**

Authors: Huang, Li;Yan, Juntao and Chen, Szu-Han Kay

Publication Date: 2025

Journal: Aphasiology

Abstract: Background: Previous research indicates that low-technology (low-tech) augmentative and alternative communication interventions (AACT) can enhance communication skills in individuals with post-stroke aphasia in China. However, there is limited evidence for low-tech AACT in inpatient settings. Aim: This study aims to evaluate the impact of low-tech AACT combined with speech-language therapy (SLT) on communication skills

related to basic needs, quality of life, and spoken language function among individuals with post-stroke aphasia in an inpatient setting. Methods & Procedures: Twelve participants with aphasia having difficulty in daily communication were randomly assigned to an experimental group, receiving 30 minutes of SLT and 30 minutes of low-tech AACT per session (AACT + SLT), or a control group, receiving 60 minutes of SLT per session (SLT), over ten sessions in two weeks. Primary outcomes were measured using the basic needs (CBN) domain of the functional assessment of communication skills for adults (FACS). Secondary outcomes included scores from the Chinese version of the stroke-specific quality of life scale (SS-QOL) and subtests of spoken language production and comprehension from the aphasia battery of Chinese (ABC). The study was registered in the Chinese clinical trial registry (ChiCTR2000028870). Results: The results indicated a significant improvement in the CBN domain of FACS in the AACT + SLT group, with larger clinically significant changes compared to the SLT group. The AACT+ SLT group also showed significantly higher overall scores on the SS-QOL and more significant improvements in the content of spontaneous speech than the SLT group after intervention. Comparable improvements were observed in other subtests of the ABC between the two groups. Conclusions: Incorporating low-tech AACT into regular SLT in inpatient settings can improve communication for basic needs in an in-patient setting, facilitate language recovery, and potentially support the overall quality of life, compared to SLT alone, for people with post-stroke aphasia. This combined approach demonstrates preliminary feasibility in hospital settings, suggesting the value of low-tech AACT in aphasia rehabilitation.

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12. **Predictors of gait speed post-stroke: A systematic review and meta-analysis**

Authors: Jasper, Amie Marie;Lazaro, Rolando T.;Mehta, Saurabh P.;Perry, Lindsay A.;Swanson, Kathryn;Reedy, Kyle and Schmidt, Jeffrey

Publication Date: 2025

Journal: Gait & Posture

Abstract: Competing Interests: Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.; Background: While gait speed serves as a clinical marker and health indicator, there is a paucity of a consolidated review of the factors that are most predictive of gait speed across the clinical stages of stroke recovery.; Research Question: What are predictors of gait speed in the acute, subacute and chronic phase of stroke, categorized according to International Classification of Functioning, Health, and Disability (ICF)?; Methods: A systematic search was conducted using four electronic databases following the PRISMA guideline. Included studies were cross-sectional, cohort and case-control reporting the predictors of gait speed, published from January 2000 to July 2024, and involved participants 18 years or older with diagnosis of stroke. Four meta-analyses were performed.; Results: The initial search yielded 311 articles. After screening, 32 articles were included in the final analysis. In all clinical stages of stroke, age was the most common predictor of gait speed, followed by admission walking speed, Berg Balance Scale (BBS) score and time since onset. Knee extensor strength emerged as a predictor in three studies, all in the chronic stage. The meta-analyses indicated that older age was associated with slower discharge gait speed (SMD: -0.004 -0.01, -0.001]; $p < 0.0001$) while higher BBS scores at

admission were associated with a larger change in gait speed between admission and discharge (SMD: 0.17 0.06, 0.28]; p = 0.002).; Significance: Understanding the modifiable factors can help clinicians target interventions and seek additional care while non-modifiable factors can guide the prognosis of walking function in people post stroke.

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13. **Efficacy of brain-computer interface training with motor imagery-contingent feedback in improving upper limb function and neuroplasticity among persons with chronic stroke: a double-blinded, parallel-group, randomized controlled trial**

Authors: Kim, Myeong Sun;Park, Hyunju;Kwon, Ilho;An, Kwang-Ok;Kim, Hayeon;Park, Gyulee;Hyung, Wooseok;Im, Chang-Hwan and Shin, Joon-Ho

Publication Date: 2025

Journal: Journal of NeuroEngineering & Rehabilitation

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14. **The effectiveness and safety of acupuncture for post-stroke depression: An overview of systematic reviews**

Authors: Miao, Run-qing;Zhu, Feng-ya;Wang, Tian-yu;Yin, Shao;Shuai, Chen;Li, Tao;Li, Zhi;Luo, Lan and Yang, Bin

Publication Date: 2025

Journal: Complementary Therapies in Medicine

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15. **Impact of Oral Sensory Function Including Proprioception on Swallowing in Patients With Stroke**

Authors: Park, So-Hyun;Ham, Dae-Hoon and Shin, Joon-Ho

Publication Date: 2025

Journal: American Journal of Physical Medicine & Rehabilitation

Abstract: Objective: The aim of the study was to assess oral sensory deficits and their correlation with mastication and swallowing in patients with stroke. Design: This prospective observational study was conducted in the stroke unit of a rehabilitation hospital. The inclusion criterion was first occurrence of stroke with a unilateral lesion. Patients underwent oral sensory tests, including tactile sensation (light touch, two-point discrimination) and proprioception, along with mastication and swallowing assessments via videofluoroscopic swallowing study and Test of Masticating and Swallowing Solids. Results: Among 36 patients, contralesional sides exhibited reduced oral sensory function (light touch, two-point discrimination, and

proprioception of lips) compared with ipsilesional sides (P = 0.003, P = 0.001, P = 0.046, respectively). Oral proprioception was negatively correlated with mastication and swallowing. Proprioception of tongue showed negative correlation with mastication (P = 0.035), while combined value of proprioception of teeth, lip, and tongue showed negative correlation with time per swallow. Contralesional light touch and two-point discrimination influenced swallow items in Test of Masticating and Swallowing Solids and pharyngeal phase items in videofluoroscopic swallowing study. Conclusions: Patients with stroke demonstrated contralesional oral sensory deficits, which were associated with impaired mastication and swallowing. Oral proprioception was correlated with mastication and swallowing, whereas tactile sensation correlated with the pharyngeal phase.

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16. **Overground robotic exoskeleton vs conventional therapy in inpatient stroke rehabilitation: results from a pragmatic, multicentre implementation programme**

Authors: Tam, Pui Kit;Tang, Ning;Kamsani, Nur Shafawati Binte;Yap, Thian Yong;Coffey-Aladdin, Ita;Goh, Shi Min;Tan, Jean Pei Pei;Lui, Yook Cing;Lee, Rui Ling;Suresh, Ramaswamy and Chew, Effie

Publication Date: 2025

Journal: Journal of NeuroEngineering & Rehabilitation (JNER)

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17. **Does the Hawthorne effect influence gait assessment in stroke patients?**

Authors: van Oorschot, Wieneke;van Mierlo, Michelle;Ormiston, Jean;Keijsers, Noël and Nonnekes, Jorik

Publication Date: 2025

Journal: Gait & Posture

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18. **Therapeutic effect of acupuncture on post-stroke dysphagia: A multicenter, randomized controlled trial**

Authors: Zhang, Shiqiang;Liang, Biying;Tang, Qiang;Gao, Weibin;Li, Hongyu;Wu, Minmin;Wang, Xue and Zhu, Luwen

Publication Date: 2025

Journal: Complementary Therapies in Medicine

Abstract: Competing Interests: Declaration of Competing Interest The authors declare no financial interests or conflicts related to this study.; Background: Dysphagia is a common

complication of stroke, significantly affecting patient prognosis and quality of life. Acupuncture is commonly used for treating post-stroke dysphagia in China, often combined with traditional swallowing rehabilitation training. However, the therapeutic effect of acupuncture alone on post-stroke dysphagia remains unclear.; Objective: To compare the clinical efficacy of acupuncture and traditional swallowing rehabilitation training in patients with post-stroke dysphagia.; Method: A multicenter, evaluator-blind, randomized controlled trial was conducted to recruit participants with post-stroke dysphagia. The experimental group received acupuncture treatment, whereas the control group received traditional swallowing rehabilitation training for 2 weeks. The Standardized Swallowing Assessment score and modified Barthel Index were compared between groups 1 and 2 weeks after the intervention. Surface electromyography (sEMG) was used to quantitatively evaluate the electromyographic activity in the suprahyoid and infrahyoid hyoid muscle groups.; Result: Overall, 254 participants were included. After 1 week of intervention, there was no significant between-group difference in efficacy ($p > 0.05$). After 2 weeks of intervention, the Standardized Swallowing Assessment score of the experimental group showed a greater decrease (-1.56, 95 %CI -2.83, -0.29], p 0.05). sEMG analysis showed that after 2 weeks of intervention, participants in the experimental group experienced greater increase in the root mean square value of the suprahyoid muscle group during fluid swallowing (1.02, 95 %CI 0.11, 2.27], $p < 0.05$).; Conclusion: Acupuncture may improve the swallowing function in patients with post-stroke dysphagia, offering therapeutic advantages for patients with pharyngeal phase dysphagia.; Registration: This study registered with the ClinicalTrials.gov Identifier: ChiCTR2000030994.

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19. **Peripheral Electrical Stimulation on Motor Function and Activities of Daily Living After Stroke: A Systematic Review and Network Meta-analysis**

Authors: Zhou, Yihao;Yang, Siyu;Li, Dongxia;Li, Wenqiang;Yang, Chen;Huo, Hong;Cai, Shaojie;Zhu, Xingyan;Zheng, Ruwen;Dong, Xu and Wang, Dongyan

Publication Date: 2025

Journal: Archives of Physical Medicine & Rehabilitation

Abstract: To compare the effects of different peripheral electrical stimulation protocols and current frequencies for poststroke motor function and activities of daily living. Seven databases (PubMed, Embase, Cochrane Library, Chinese National Knowledge Infrastructure, VIP Database, Wan-Fang Database, and Chinese Biomedical Database) were searched from inception to August 2024. Two reviewers independently performed the literature selection. The included studies were randomized controlled trials providing peripheral electrical stimulation for patients with stroke. Two reviewers independently extracted data following a predeveloped Excel data collection sheet, including trial characteristics, intervention and comparator details, and outcome data. The risk of bias was evaluated by RoB2 tool, and the PRISMA guidelines were followed for reporting. A total of 106 trials with 7513 participants were included. Meta-analysis showed that neuromuscular electrical stimulation (NMES) could be the optimal electrical stimulation protocol for improving the Fugl-Meyer Assessment score (standardized mean difference=1.67; 95% confidence interval 1.14-2.21]) and the modified Barthel Index score (standardized mean difference=1.73; 95% confidence interval 1.10-2.37]). The results showed that different frequencies of electrical stimulation ranked the top 5 in descending order

for improving: (1) the Fugl-Meyer Assessment scores as follows: 20-30 Hz_NMES (surface under the cumulative ranking curve SUCRA]=87.5%)>100 Hz_NMES (SUCRA=75.4%)>100 Hz_functional electrical stimulation (SUCRA=70.9%)>20/35 Hz_transcutaneous electrical acupoint stimulation (SUCRA=69.8%)>1-4 Hz_electrical acupuncture (SUCRA=69.6%) and (2) the modified Barthel Index scores as follows: 100 Hz_transcutaneous electrical nerve stimulation (SUCRA=77.3%)>5/15 Hz_NMES (SUCRA=68.3%)>100 Hz_transcutaneous electrical acupoint stimulation (SUCRA=65.6%)>35-50 Hz_functional electrical stimulation (SUCRA=64.8%)>1-4 Hz_electrical acupuncture (SUCRA=60.0%). Adding electrical stimulation based on routine rehabilitation training can improve the motor dysfunction and activities of daily living of patients with stroke. Specifically, NMES with 20-30 Hz improves motor function best, whereas 100 Hz_transcutaneous electrical nerve stimulation improves activities of daily living best.

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20. **Costs and Benefits of the Melbourne Mobile Stroke Unit Compared With Standard Ambulance: Causal Analysis Using Observational Linked Data**

Authors: Cadilhac, Dominique A; Birhanu, Muluget M; Churilov, L; et al

Publication date: 2025

Journal: Stroke

Abstract: Background Evidence of the cost implications and health outcomes associated with the use of mobile stroke units (MSU) is required to support their utilization. We aimed to evaluate the causal effect of the use of an MSU compared with a standard ambulance on hospitalization costs and 90- to 180-day health outcomes.

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21. **Global prevalence and risk factors of delirium among patients following acute stroke: A systematic review and meta-analysis**

Authors: Muhammad Amirul Mukminin , Tu-Hsueh Yeh, Hui-Chen Lin, Iftitakhur Rohmah Hsiao-Yean Chiu

Publication Date: 2025

Journal: Journal of Cerebrovascular Diseases

Abstract: Background and objective: The exact prevalence and risk factors of delirium following stroke at an acute stage remains unclear. We aimed to determine the global prevalence and risk factors of delirium following acute stroke.

Method: Observational studies reporting the prevalence of or risk factors for delirium following acute stroke published in the PubMed, Embase, and Scopus databases before April 16, 2024, were identified. Data were extracted by two independent reviewers. A random effects model was used for data analysis.

Results: Our meta-analysis included 48 studies on prevalence and 25 studies on risk factors for poststroke delirium. The pooled global prevalence rate of delirium was 24 % (18 %-30 %). Hemorrhagic stroke type, early assessment (within 3 days of stroke onset), older age, and male sex were risk factors for poststroke delirium. Independent factors significantly associated with poststroke delirium (all $p < 0.05$) were age, dementia, prior stroke, prior total anterior

circulation infarct stroke subtype, atrial fibrillation, elevated C-reactive protein levels, aphasia, poor vision, neglect, depression, and the use of urinary catheters and gastric tubes.

Conclusion: Approximately a quarter of the included patients with acute stroke experienced delirium. Our findings regarding the risk factors for poststroke delirium can provide an evidence-based approach for future strategies to prevent delirium.

22**. Knowledge, attitude, and practice of stroke patients' family members towards stroke rehabilitation: A cross-sectional study**

Authors: Li, Dongdong; Guo, Hui; Sun, Yiwen; et al

Publication Date: 2025

Journal: Journal of Stroke and Cerebrovascular Diseases

Abstract: Background: This study aimed to explore the knowledge, attitude, and practice (KAP) among family members of stroke patients regarding stroke rehabilitation.

Methods: A cross-sectional study was conducted on the family members of stroke patients at the China Rehabilitation Research Center from February 15 to May 2, 2024. This study collected demographic data and KAP scores through a self-designed questionnaire.

23**. Nutritional care in rehabilitation and acute care of stroke patients: a systematic review of clinical practice guidelines**

Authors: Karina Siewers; Katrine Svaerke, Amira Eliza Rosenørn, Hanne Christensen

Publication Date: 2025

Journal: Frontiers in Stroke

Background: Malnutrition and nutritional care are significant challenges for healthcare professionals treating stroke patients, in both acute care and during rehabilitation. This study aimed to assess and synthesize the nutritional care recommendations in clinical practice guidelines (CPGs) for managing malnutrition risk in stroke patients, evaluate the supporting evidence, identify research gaps, and assess the quality of the CPGs.

24. **Group versus individual delivery of upper limb intervention for adults post-stroke: A systematic review and meta-analysis**

Authors: McNally, Siobhan T; Joseph, Corey; Milne, Sarah C

Publication Date: 2025

Journal: Clinical Rehabilitation

Abstract: ObjectiveTo systematically review the evidence and examine the effectiveness of group-based UL intervention versus individual therapy, in decreasing impairment and improving UL function post-stroke.Data SourcesA comprehensive search of four key databases (CINAHL, Embase, Emcare, and MEDLINE) identified relevant studies published from inception through to November 2024.Review methodsTwo reviewers independently performed screening for inclusion according to selection criteria. Eligible studies provided dose-matched group and individual UL rehabilitation programs. Outcomes that measured UL impairment (Fugl-Meyer Upper Extremity Test) or function (Action Research Arm Test) were extracted for meta-analysis. Methodological quality was assessed using the PEDro scale.ResultsOf 3291 publications, eight studies were included (*n* = 348) (seven randomised controlled trials and one controlled trial) of poor to good quality. A random effects meta-analysis model was conducted. Statistical significance was determined using analysis of covariance. No significant effects were shown in the meta-analyses on the effect of group versus individual therapy on UL impairment (mean difference 0.87, 95% CI: -0.87 to 2.62, *p* = .327) or function (mean difference 1.53, 95% CI: -0.23 to 3.29, *p* = .089). Results were limited by small sample sizes and substantial heterogeneity, with wide variation in intervention type, dosage and setting.ConclusionMeta-analyses suggest group-based UL intervention may be as effective as intervention delivered one-to-one, post-stroke. Additional studies of large sample size and rigorous methodology are necessary to substantiate these findings. Future research should investigate which types of UL intervention are most effective when provided in group-based settings across the different stages of stroke recovery.
