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FLUOROQUINOLONE-ASSOCIATED PERIPHERAL AND CENTRAL NERVOUS SYSTEM DISORDERS

Fluoroquinolones (FQ) are an important class of broad-spectrum antibiotics, frequently prescribed for the treatment of various gram-negative, gram-positive, atypical, and anaerobe bacteria. There is increasing evidence of serious FQ-associated adverse drug reactions, including injury to peripheral nerves. This study was designed to examine the association between newly prescribed FQ and the occurrence of polyneuropathy and certain neuropsychiatric events.

Data were obtained from AOK – Die Gesundheitskasse, one of the largest statutory health insurances in Germany. Patients ≥18 years with an incident antibiotic prescription were followed up for 365 days after initial dispensing. The outcomes included incident diagnoses of polyneuropathy/ other peripheral nervous system-related diseases (PNS), depression/ other affective disorders (DEP), mood -related symptoms (MOOD), somnolence/stupor/coma (SSC), and consciousness-related symptoms (CONSCIOUS). The risk of these was adjusted for age, and comorbidities.

Those with a new FQ prescription demonstrated modestly increased adjusted hazard ratios compared to other antibiotics for PNS (hazard ratio [HR] 1.04), DEP (HR 1.09), MOOD (HR 1.08), SSC (HR 1.10), and CONSCIOUS (HR 1.08). The risks were highest in the first 92 days and varied by subgroup, with elevated risk found among males ≤39 years.

Conclusion: This large database analysis found that fluoroquinolones use is associated with a small increased risk of peripheral nervous system-related diseases, depression/ other affective disorders, mood-related symptoms, somnolence/ stupor/coma, and consciousness-related symptoms.

Wicherski, J., et al. Fluoroquinolone-Associated Peripheral and Central Nervous System-Related Disorders: A Large German Claims-Based Cohort Study. **Eur J Neurol.** 2026, Apr;33(4):e70585.

INSULIN ICODEC: ONCE-WEEKLY BASAL INSULIN FOR DIABETES

Icodec is an ultra-long-acting human insulin analog suitable for once-weekly dosing, approved by the European Medicines Agency for the treatment of type 2 diabetes mellitus (T2D). This study summarizes the efficacy and safety findings from the ONWARDS global clinical trial program, relying on both systematic reviews and meta-analyses.

This narrative review included findings from a literature search of primary findings from the ONWARDS clinical trial program, as well as relevant systematic reviews and meta -analyses, studies on icodec titration, and the hospital experience with icodec. The key outcome measures included the change in HbA1c, and achievement of HbA1c <7% without hypoglycemia. Hypoglycemic events were defined as level one (blood glucose >54 to <70 mg/dL), clinically significant level two (blood glucose < 54 mg/dL), or severe level 3 (hypoglycemia associated with severe cognitive impairment that required external assistance for recovery).

Data were reviewed from 3,764 T2D participants across ONWARDS trials one-five. The meta-analysis demonstrated superior HbA1c reduction, compared with once-daily basal insulins (p=0.003), with a higher proportion achieving HbA1c <7% without level two or three hypoglycemia (odds ratio 1.45, p<0.00001). Level one hypoglycemic events were higher with icodec (odds ratio 1.38, p=0.0003). No differences were found between groups in severe hypoglycemia or most adverse events.

Conclusion: This study found that once weekly icodec is associated with improved HbA1c control and has a similar risk of hypoglycemia and similar safety profile compared with daily insulins.

Xu, K., et al. Insulin Icodec: A Once-Weekly Basal Insulin on the Horizon for Diabetes Management with Implications for Hospital Care Transitions. **Health Sci Rev.** 2026, March;18:100258.

MIDDLE MENINGEAL ARTERY EMBOLIZATION FOR CHRONIC SUBDURAL HAEMATOMA

Chronic subdural hemorrhage (cSDH) is characterized by a chronic collection of blood in the subdural space. Conventional treatment options include medical management or surgical drainage. The middle meningeal artery (MMA) embolization procedure selectively targets the distal MMA branches which has been shown to enhance the resorption of the SDH. This study was designed to better understand the clinical and radiological outcomes of MMA embolization for patients with cSDH.

This retrospective review included the records of 30 consecutive patients who underwent MMA embolization procedures. The procedures were performed as primary treatment (n=25), pre-emptive adjunct to surgery (n=2), sole treatment after failed drainage (n=10), or adjunct after failed drainage (n=2). Follow-up CT head and follow-up clinical assessment occurred at a mean of 4.5-5 months. Outcomes included visual assessment and measurement of the cSDHs using a CT head scan prior to and after embolization. Clinical improvement was determined by a Glasgow Coma Scale (GCS) score and/or reduced or resolved symptoms.

A total of 32 embolization sessions were performed with a total of 39 separate cSDHs embolized. At follow up, radiological resorption was complete in 59% and partial resorption in 31% while 10% required subsequent surgery. Clinically, 77% improved or became independent,

10% had no follow-up but stable imaging, 3% had persistent deficits, and 10% died from comorbidities. No peri-operative morbidity or mortality occurred.

Conclusion: This study of patients diagnosed with chronic subdural hematomas found that treatment with a middle meningeal artery embolization resulted in complete or partial resorption in 90% and clinical improvement or independence in 77%.

Gravino, G., et al. Middle Meningeal Artery Embolisation for Chronic Subdural Hematoma – A UK Single-Centre Experience. **Br J Neurosurg.** 2026;40(2):235-244.

DELAY IN DIABETES DIAGNOSIS AFTER HIGH-DEDUCTIBLE HEALTH PLAN ENROLLMENT

Diabetes mellitus (DM) is one of the leading causes of death and disability worldwide. As 3.4% of all US adults have undiagnosed DM, this study explored the effects of high-deductible health plans (HDHPs) on delays in the diagnosis.

Claims data from a major national health insurer were examined for adults between 18 and 64 years old who had no previous diagnosis of DM. Researchers compared individuals who were required by their employers to switch from low-deductible health plans (LDHPs, $500 or less, n=346,492) to high-deductible health plans (HDHPs, $1000 or more, n=346,492) with those who continued using LDHPs (control group). The primary outcome was the time to the diagnosis of DM. Secondary outcomes included mean total (an estimate of insurer plus patient out of pocket (OOP) costs) and OOP costs.

The median time to DM diagnosis was 37.0 months in the control and 38.7 months in the HDHP group (adjusted hazard ratio (aHR) 0.93). Newly diagnosed HDHP members had 20% higher total peri-diagnosis medical costs and 51% higher out-of-pocket costs compared to the control group.

Conclusion: This large study found that enrollment in high-deductible health plans was associated with a delay in the diagnosis of diabetes resulting in increased peri-diagnosis total as well as out-of-pocket medical costs.

Marcondes, F., et al. Delay in Diabetes Diagnosis After High-Deductible Health Plan Enrollment: A Pre-Post Study with Control**. J Gen Intern Med.** 2025, April;41(5):1259-1267.

ASSOCIATION OF PHYSICAL ACTIVITY WITH STROKE RISK

Physical activity (PA) is widely recognized as a cost-effective preventive strategy for cardio-cerebrovascular diseases. The dose-response relationship between PA, particularly moderate-to-vigorous physical activity (MVPA), and the risk of stroke is still unclear. This meta-analysis was designed to better understand this relationship.

This systematic review and dose-response meta-analysis included 14 international prospective cohort studies that reported quantitative measures of total PA or MVPA, with at least three years follow-up. From the data, PA was standardized to MET-hours per week (MET-h/wk).

Fourteen studies were included in the dose–response meta-analysis, covering 2,639,086 participants and 50,880 stroke cases with follow-up of 4.9 to 17.9 years. For total PA, a nonlinear inverse association was found with the risk of stroke ($p < 0.001$). For each 10 MET-h/wk increase in total PA, the risk of stroke fell by 1% (13% maximum reduction). After this, the benefits plateaued. The greatest benefit of MVPA (19% reduction) was found at 19 MET-h/wk ($p < 0.001$). Patterns for ischemic stroke paralleled those for total stroke.

Conclusion: This systematic literature review and meta-analysis found that higher total physical activity and moderate to vigorous physical activity are associated with a reduced stroke risk, with optimal benefits at 130 MET-h/wk for total physical activity and 19 MET-h/wk for moderate-to-vigorous physical activity.

Li, Z., et al. Association of Total and Moderate-To-Vigorous Physical Activity with Stroke Risk: A Dose-Response Meta-Analysis Of 2,639,086 Participants From 14 International Prospective Cohort Studies. **Int J Stroke.** 2026, April;21 (4): 447-456.

ASUNDEXIAN FOR SECONDARY STROKE PREVENTION

Dual antiplatelet therapy for 21 to 90 days is recommended for minor ischemic stroke (IS) or transient ischemic attack (TIA). Antiplatelet monotherapy is recommended for

moderate-to severe stroke and long-term treatment. Even with this treatment the risk of recurrent stroke is incompletely reduced. As low factor XI levels are associated with a reduced risk of IS, this study investigated the effects of asundexian (an oral factor XIa Inhibitor) for secondary stroke prevention.

This phase three double-blind, randomized, placebo-controlled trial included 12,327 patients enrolled within 72 hours of symptom onset. Among the patients presenting with stroke, 3,201 (27.4%) received intravenous thrombolysis, endovascular therapy, or both. Dual antiplatelet therapy was planned at randomization in 7,712 patients. The patients were randomly assigned to receive asundexian (50 mg once daily), or placebo in addition to antiplatelet therapy, with a median follow up of 567 days.

At follow up an IS was diagnosed in 384 (6.2%) of the IS group and 518 (8.4%) of the placebo group (hazard ratio (HR) 0.74; p<0.001). The key secondary composite outcome of cardiovascular death, myocardial infarction, or stroke was also reduced (9.2% vs. 11.1%; HR 0.83; p<0.001). Major bleeding occurred in 1.9% of the asundexian group and 1.7% of the placebo group (HR 1.10).

Conclusion: This study of patients presenting with noncardioembolic ischemic stroke or a high-risk transient ischemic attack who were taking antiplatelet therapy found that the risk of subsequent ischemic stroke was lowered by adding an oral factor XIa Inhibitor (asundexian) without increasing the risk of major bleeding.

Sharma, M., et al. Asundexian for Secondary Stroke Prevention. **N Engl J Med.** 2026, April 16;394(15):1467-1479.

ENDOVASCULAR THERAPY FOR POST-THROMBOTIC SYNDROME

Post-thrombotic syndrome (PTS) frequently develops after acute proximal deep-vein thrombosis (DVT). The C-TRACT (Chronic Venous Thrombosis: Relief with Adjunctive Catheter-Directed Therapy) trial was designed to determine whether endovascular therapy would reduce the severity of PTS.

The C-TRACT phase three trial enrolled 225 patients with moderate or severe PTS and iliac-vein obstruction. The patients were assigned 1:1 to endovascular therapy (iliac-vein stent placement plus enhanced antithrombotic therapy) plus standard post-thrombotic syndrome care or to standard care alone (compression, anticoagulation, exercise, and wound care as needed). The primary measure was the Venous Clinical Severity Score (VCSS) at six months. Key secondary outcome measures were venous disease–specific (VEINES-QOL) and overall (SF-36 physical component) quality of life (QOL).

At six months, PTS clinical severity was lower in the endovascular group than in the control group (p=0.001). In addition, venous-specific QOL improved more with endovascular therapy (p<0.001), as did overall QOL (p<0.001). Bleeding occurred in 11.6% of the endovascular group and in 3.6% of the control group (p=0.03), though most were minor. Recurrent VTE and death rates were similar between groups.

Conclusion: This study of patients with moderate or severe post-thrombotic syndrome and iliac-vein obstruction found that treatment with endovascular therapy resulted in less severe post-thrombotic syndrome and better quality of life.

Vedantham, S., et al. Endovascular Therapy for Post-Thrombotic Syndrome -A Randomized Trial. **N Engl J Med.** 2026.Published ahead of print.

PATELLAR RESURFACING IN TOTAL KNEE ARTHROPLASTY: A TWO-DECADE RETROSPECTIVE COHORT

Studies of patients undergoing total knee arthroplasty (TKA) have indicated that patella resurfacing (PR) during this procedure may reduce the risk of post-operative anterior knee pain and risk of revision. However, the impact of PR remains a topic of debate. This study was designed to better understand whether PR acts as an independent prognostic variable for revision, anterior knee pain, aseptic loosening, and patient-reported outcomes among patients undergoing TKA.

This retrospective cohort study included the records of 271 consecutive primary TKAs performed at a single Mexican tertiary hospital (136 PR knees and 135 without PR [WPR] knees). Resurfacing was selected when patellar cartilage was scored as Outerbridge ≥ 2. Data collection included demographics, comorbidities (primarily rheumatoid arthritis), complications, revisions, and functional scores (WOMAC and Oxford Knee Score) with a median eight-year follow-up.

In the 271 knees (80% female), PR significantly lowered anterior knee pain (2.2% vs 85.2% in WPR; p<0.001) and aseptic loosening (4.4% vs 11.9%; p=0.01). Revision rates were comparable (5.1% PR vs 6.7% WPR). Improvements in the PR group were greater in WOMAC and Oxford Knee Scores (both p<0.001). Eight-year implant survival was 96.7% in the PR group and 90.7% in the WPR group.

Conclusion: This study of consecutive total knee arthroplasty surgeries found that those surgeries that included patella resurfacing resulted in significantly reduced anterior knee pain and aseptic loosening without increasing the rate of revision surgery.

Osorio, D., et al. Patellar Resurfacing as A Prognostic Variable in Total Knee Arthroplasty: A Two-Decade Retrospective Cohort (2000-2020). **BMC Musculoskelet Disord.** 2026;27:27. doi: 10.1186/s12891-025-09076-y.

CHANGES IN PERIPROSTHETIC BONE DENSITY AFTER MEDIAL KNEE ARTHROPLASTY

Unicompartmental Knee Arthroplasty (UKA) has been validated through years of clinical practice as an effective treatment for anteromedial knee osteoarthritis (AMOA). The dynamic pattern of periprosthetic bone mineral density (BMD) changes after unicompartmental knee arthroplasty (UKA) and its potential link to aseptic loosening remain understudied. This study was designed to better understand the dynamic post-UKA periprosthetic BMD changes to provide evidence for optimizing management and reducing the risk of hardware loosening.

This prospective cohort study enrolled 40 patients with AMOA who underwent UKA. Knee radiographs were used for dividing regions of interest (ROIs) around the tibial prosthesis, including the lateral side of the tibial prosthesis keel (ROI 1), the medial side of the tibial prosthesis keel(ROI 2), the anterior aspect of the femoral prosthesis stem(ROI 3), and the posterior aspect of the femoral prosthesis stem(ROI 4). Dual-energy X-ray absorptiometry (DEXA) was used to measure periprosthetic BMD

in these ROIs preoperatively and up to 12 months postoperatively.

Periprosthetic BMD decreased rapidly at one and three months postoperatively in all regions of interest, then increased significantly at six and 12 months ($p < 0.05$). At one year, BMD exceeded baseline. No significant differences were noted in tibial prosthesis BMD changes (ROI 1, ROI 2) or femoral prosthesis stem posterior BMD (ROI 4) between six and 12 months ($p > 0.05$).

Conclusion: This study of patients undergoing unicompartmental knee arthroplasty found that bone mineral density fell at one and three months after surgery but recovered and exceeded baseline values by 12 months.

Wei, L., et al. Changes in Periprosthetic Bone Mineral Density After Medial Unicompartmental Knee Arthroplasty: A Prospective Cohort Study. **Int Orthop.** 2026, Feb;50 (2):419-424.

DURATION OF SMOKING CESSATION NEEDED AND ROTATOR CUFF RETEAR RATES

Smoking has emerged as one of the most detrimental factors affecting tendon healing and clinical outcomes after rotator cuff repair. It is still unclear as to the time since smoking cessation needed for an ex-smoker to achieve retear rates comparable to nonsmokers. This study was designed to better understand this issue.

This retrospective study included 1,902 patients who underwent an arthroscopic full-thickness rotator cuff repair (2012–2023). The patients were stratified into nonsmokers (n=1172), former smokers (n=454, further subdivided by cessation duration), and current smokers (n=276). After 1:1:1 matching by age, employment status, tear size, and fatty infiltration, data from 276 patients were included in the analysis. The retear rates were compared by groups.

Compared to nonsmokers the odds ratios (ORs) for retear were 1.547 (p=0.03) for former smokers and 1.924 for current smokers (p=0.001). Among former smokers, retear rates decreased progressively with a longer time since cessation such that patients with smoking cessation intervals of ≥ three years had comparable outcomes to nonsmokers. A multivariable analysis found that pack-years (cutoff 14), and cessation duration (cutoff 44 months) were independent predictors of an increased risk for retear.

Conclusion: This study of patients undergoing arthroscopic rotator cuff repair found that at least three years of smoking cessation is needed to achieve retear rates comparable to nonsmokers.

Chang, H., et al. Duration of Smoking Cessation Needed to Achieve Retear Rates Comparable to Those of Nonsmokers After Arthroscopic Rotator Cuff Repair. **Am J Sports Med.** 2026, April;54(5):1126-1134.

PHYSICAL ACTIVITY TRAJECTORIES FOLLOWING ACL RECONSTRUCTION

The association between moderate-to-vigorous physical activity (MVPA) trajectories in the first year after anterior cruciate ligament reconstruction (ACLR) and early markers of knee osteoarthritis (OA) remains unclear. This study was designed to identify distinct MVPA trajectories between two and 12 months post-ACLR and compare these to tibiofemoral articular cartilage composition changes and patient-reported outcomes (PROs).

This study is a secondary analysis of longitudinal data from fifty-one patients (mean age 22.1 years) following primary unilateral ACLR. For one-year, daily MVPA was collected using hip-worn ActiGraph accelerometers, with data reviewed for patterns of daily MVPA. Progression of OA was assessed using MRI-assessed cartilage composition in medial and lateral tibiofemoral compartments. This was compared to levels of MVPA. The Knee Injury and Osteoarthritis Outcomes Score (KOOS) were used to assess patient related outcomes.

Two activity trajectories emerged: consistent (C) MVPA (74.5%) and high-increasing (H-I) MVPA (25.5%). The H-I group demonstrated significantly greater increase in OA in the lateral femoral condyle (p=0.007) and higher KOOS sport scores (p=0.037) than the C group.

Conclusion: This study of patients following ACLR found that excessively high and increasing MVPA in the first year post-ACLR may accelerate early cartilage changes.

Büttner, C., et al. Physical Activity Trajectories in the First Year Following ACL Reconstruction and Links to Early Markers of Osteoarthritis Development. **Med Sci Sports Exerc**. 2026, May;58(5): 979-988.

LONG-TERM OUTCOMES OF ACL PRIMARY REPAIR

Despite improved techniques, the incidence of posttraumatic osteoarthritis (PTOA) after anterior cruciate ligament reconstruction (ACLR) is still considerable. For proximal tears of the ACL some have proposed repair of the ligament as an alternative to reconstruction. This study was designed to determine the long-term incidence of PTOA and clinical outcomes after ACL primary repair (ACLPR).

Prospective data were collected on consecutive patients with modified Sherman type one ACL tears who underwent ACLPR between 2008 and 2013, with a minimum of 10-year follow-up. Standardized bilateral knee radiographs were obtained preoperatively and at 10 years to assess Kellgren-Lawrence (KL) grade and minimal joint space width. Clinical outcomes included repair failure, reoperation rates, objective laxity, and patient-reported outcome measures (IKDC, Lysholm, FJS-12, ACL-RSI, Tegner, PASS).

Sixteen of 18 eligible patients (median age 40 years) were available for 10 years follow-up. At the 10-year follow-up, no patient had clinical symptoms consistent with symptomatic OA. The PTOA incidence was low: 42% KL grade 0, 50% grade 1, and 8% grade ≥2 (n=12 radiographs). Joint space width showed no significant differences in any compartment (all p>0.05). Repair failure and reoperation each occurred in 12.5% (2/16).

Conclusion: This case series of patients undergoing a primary repair after a tear of the anterior cruciate ligament found a low incidence of clinically relevant radiographic posttraumatic osteoarthritis and an acceptable repair failure rate.

Mueller, M., et al. Low Incidence of Osteoarthritis and Excellent Clinical Outcomes at Minimum 10 Years Following Primary Repair of The Anterior Cruciate Ligament. **Orthop J Sports Med.** 2026;14(4). doi:10.1177/23259671261422236.

ANTERIOR CRUCIATE LIGAMENT REPAIR WITH INTERNAL BRACE

For injuries to the anterior cruciate ligament (ACL), primary ACL repair (ACLR) is thought to have

advantages over ACL reconstruction by retaining the proprioceptive fibers of the ACL. The use of this procedure fell as high failure rates became evident. The ACLR has been modified to include an internal brace created using high-strength suture tape or multiple high-strength sutures to reinforce the ligament and act as a secondary stabilizer. The most frequent of these is the arthroscopic primary repair with internal brace ligament augmentation (IBLA). This literature review was designed to better understand the efficacy of this procedure.

Databases were scanned for English-language studies published in the last 10 years. Study inclusion required arthroscopic primary ACL repair with IBLA with a minimum 12-month mean follow-up.

The literature search identified 24 studies including 866 patients with a mean follow-up 31.1 months. The overall failure rate was 9.1%. Patient-reported outcomes were excellent (mean Knee Injury and Osteoarthritis Outcome Score (KOOS) score 88.1, International knee documentation committee (IKDC) score 87.2, Lysholm score 92.2). The best outcomes occurred in younger, nonelite athletes presenting within three months of injury with partial or complete ruptures.

Conclusion: This literature review of patients with anterior cruciate tears found that primary ACL repair with internal brace ligament augmentation appears to be a workable choice for a well-defined patient subset.

Paukovits, T., et al. Arthroscopic Primary Repair of The Anterior Cruciate Ligament with Internal Brace Ligament Augmentation: A Viable Alternative to Reconstruction? A Systematic Literature Review and Analysis. **BMC Musculoskelet Disord.** 2026. https://doi.org/10.1186/s12891-026-09729-6.

MMSE AND PHQ-15 AS PREDICTORS OF POSTOPERATIVE DELIRIUM FOLLOWING TOTAL KNEE ARTHROPLASTY

Postoperative delirium (POD) is a clinically important complication in elderly patients undergoing major orthopedic surgeries. This manifests as acute confusion, inattention, and fluctuating mental status. This study was designed to determine whether low cognitive function and somatic psychological symptoms are correlated with greater risk of delirium after total knee arthroplasty (TKA).

This prospective cohort study included data from 574 patients aged 60 years or older undergoing primary TKA. Preoperative cognitive function was evaluated using the Mini-Mental State Examination (MMSE), the full Consortium to Establish a Registry for Alzheimer's Disease (CERAD) battery, the Subjective Memory Complaints Questionnaire and the Seoul Informant Report Questionnaire for Dementia. Psychological symptoms were assessed using the Patient Health Questionnaire-15 (PHQ-15), Pittsburgh Sleep Quality Index, and Hospital Anxiety and Depression Scale. Postoperative delirium was diagnosed daily for the first five days using the Confusion Assessment Method and 4 A's Test. Multivariable logistic regression was performed to identify independent risk factors.

Postoperative delirium developed in 24 of 574 patients (4.2%). Significant associations with POD included lower MMSE scores ($p < 0.001$), higher PHQ-15 scores ($p = 0.014$), and higher Pittsburgh Sleep Quality Index scores ($p = 0.014$). In multivariable logistic regression, lower MMSE scores remained an independent predictor of POD (OR 0.77, $p = 0.002$), as did higher PHQ-15 scores (OR 1.187, $p = 0.028$). Complex CERAD subtests and other psychiatric measures did not add significant independent value beyond these simple tools.

Conclusion: This prospective cohort study of patients >60 years of age undergoing TKA found that screening with the MMSE and PHQ-15 effectively identifies patients at increased risk of postoperative delirium and outperforms more complex psychiatric assessments.

Lee, J., et al. Low Cognitive Function and Somatic Psychological Symptoms Are Correlated with Greater Risk of Delirium After Total Knee Arthroplasty. A Prospective Cohort Study. **J Bone Joint Surg Am**. 2026, April;108(8):584-592.

RETURN TO WORK AFTER ACQUIRED BRAIN INJURY: EXECUTIVE DYSFUNCTION PROFILES

Acquired Brain Injury (ABI) is a global health problem due to its prevalence, associated disability, impact on quality of life, and direct and indirect economic costs. The average rate of return to work among individuals who have suffered a traumatic brain injury is estimated to be 41%, with cognitive, emotional, and behavioral issues impacting return-to-work outcomes. Executive functions (EFs) are a group of abilities people use to adjust to uncertain or shifting situations. When executive dysfunction (ED) occurs, it can lead to reduced independence and limit participation in social activities. This study was designed to determine whether different EF profiles predict difficulties in returning to work after an ABI.

The subjects were 65 working-age community-dwelling adults (mean age 48.2 years) with an ABI (primarily stroke or TBI) who were employed before their injury. The European Brain Injury Questionnaire (EBIQ) was used to estimate participants' general cognitive function. The Patient Health Questionnaire (PHQ) was used to evaluate emotional issues. Executive functions were assessed using the Frontal Systems Behavior Scale (FrSBe). Functional independence was measured with the Technology – Activities of Daily Living Questionnaire (ADLQ-T). Participants were classified as returned to work (n=20) or not returned to work (n=45).

Individuals who did not return to work showed significantly worse FrSBe scores (p=0.026), executive cognition subscale scores (p=0.021), and apathy subscale scores (p=0.044), plus greater functional dependence, measured by the ADLQ -T (p=0.001). Worse ED total scores and ADLQ-T scores predicted return-to-work status.

Conclusion: This study of adults with acquired brain injury found that return to work was less likely among those with executive dysfunction profiles, particularly apathy/ energization and executive cognition difficulties.

Aliaga, A., et al. Return to Work After Acquired Brain Injury: The Influence of Executive Dysfunction Profiles. **Brain Inj.** 2026, May;40(5):405-416.

BASELINE CEREBRAL SMALL VESSEL DISEASE PREDICTS COGNITIVE DECLINE IN TIA

Cerebrovascular disease (CVD) is one of the leading causes of cognitive impairment in patients > 75 years of age. The long-term association between cerebral small vessel disease (CSVD) imaging markers and cognitive decline, specifically in patients with transient ischemic attack (TIA) remains unclear. This study

investigated the prevalence of CSVD biomarkers on baseline MRI in patients presenting with TIA, and their association with cognitive performance over three years.

This paper presents a post-hoc analysis of the INSPiRE-TMS (Intensified Secondary Prevention Intending a Reduction of Recurrent Events in TIA and Minor Stroke Patients) study. The subjects included 246 patients with a TIA (mean age 69.4 years). A composite CSVD score (0–4) was calculated by incorporating Age-Related White Matter Changes (ARWMC ≥10), lacunes, cerebral microbleeds (CMBs), and enlarged perivascular spaces (PVS). Cognitive function was assessed with the Montreal Cognitive Assessment (MoCA) at baseline and annually up to three years. The data were analyzed to determine the association between CSVD-score and MoCA scores.

In the entire cohort (n=246) the most prevalent CSVD marker was lacunes (36.6%), followed by enlarged PVS (28.1%), white matter hyperintensities (WMH) (19.5%), and CMBs (17.9%). For all sub-domains of cognition except for orientation, higher CSVD-scores were associated with worse domain-specific performance. The strongest of these was for the memory domain (p=0.015).

Conclusion: This study found that CSVD imaging markers are present in over half of patients presenting with a transient ischemic attack and are independently associated with cognitive decline up to three years after the event.

Roesen, P., et al. Baseline Cerebral Small Vessel Disease Predicting Long-Term Cognitive Decline in Transient Ischemic Attack Patients. **Eur J Neurol**. 2026, Apr;33 (4):e70578.

ULNAR NEUROPATHY AT THE ELBOW IN WHEELCHAIR-DEPENDENT PARAPLEGICS

Patients with paraplegia due to a spinal cord injury (SCI) rely on their upper extremities for wheelchair propulsion. As wheelchair activity may be associated with ulnar nerve neuropathy at the elbow (UNE), this study explored the prevalence and risk factors for UNE among paraplegics.

This cross-sectional analysis evaluated baseline data from 49 wheelchair-dependent individuals with paraplegia (neurological level below C6, ≥12 months post-injury). Participants completed a questionnaire assessing symptoms and frequency of activities involving elbow leaning or flexion (e.g., hooking over wheelchair handle, transfers/ weight shifts), and underwent physical examination including Tinel's sign and pinch strength. All underwent bilateral nerve conduction studies, with UNE defined as ulnar motor conduction velocity slowing >10 m/s across the elbow segment.

Among the 49 subjects, UNE was present in eight (16% with three bilateral cases). Factors associated with UNE included frequent hooking over the wheelchair handle (63% vs 24%, p = 0.05) and frequent elbow bending during transfers or weight shifts (50% vs 15%, p = 0.04). No associations were found with age (p = 0.19), time since injury (p = 0.90), sex (p = 0.25), Tinel's sign, or median neuropathy at the wrist (p = 0.69).

Conclusion: This study of 49 wheelchair dependent paraplegics found that 16% had nerve conduction evidence of ulnar neuropathy at the elbow which was associated with specific modifiable biomechanical risk factors related to wheelchair use.

Chou, R., et al. Prevalence of and Risk Factors Associated with Ulnar Neuropathy at the Elbow in Wheelchair-Dependent Individuals with Paraplegia. **Spinal Cord.** 2026, April;64(4):397-400.

PROPHYLACTIC SUBCUTANEOUS HEPARIN FOLLOWING LUMBAR FUSION

After spine surgery, patients are at risk for deep vein thrombosis (DVT) and pulmonary embolism (PE). This study was designed to understand the relative risk and benefits between two venous thromboembolism (VTE) prophylaxis protocols.

This retrospective study used data from two major academic studies. Data was obtained from the records of adult patients who underwent one-to three-level instrumented lumbar fusion between 2017 and 2022. Of 3,106 patients, 1,442 received mechanical-only prophylaxis and 1,664 received subcutaneous heparin (5,000 units three times daily) plus mechanical prophylaxis. The patients were matched by demographic, surgical, and comorbidity covariates.

In the propensity score-matched analysis there were no significant differences between the mechanical-only and combined-prophylaxis groups in symptomatic epidural hematomas (1.2% vs 1.5%, p=0.81), DVTs (0.2% vs 0.9%, p=0.12), or PEs (0.2% vs 0.3%, p=1.0).

Conclusion: This study of patients undergoing one-level to three -level lumbar fusion found that the addition of subcutaneous heparin to mechanical prophylaxis did not reduce VTE incidence or increase the risk of symptomatic epidural hematoma.

Crawford, A., et al. Prophylactic Subcutaneous Heparin Is Not Associated with Increased Rates of Hematoma, Pulmonary Embolism, Or Deep Vein Thrombosis Following Lumbar Fusion: A Multi-Institutional, Propensity Score-Matched Analysis Of 3,106 Patients. **Spine.** 2026, March;51(6):377-383.

QUALITY OF LIFE AFTER SURGERY FOR CERVICAL MYELOPATHY

Degenerative cervical myelopathy (DCM) is a chronic, progressive compression of the cervical spinal cord that results in a wide spectrum of neurological deficits. While surgical treatment remains the standard therapeutic option, postoperative outcomes are heterogeneous. This study was designed to identify distinct trajectories of postoperative quality of life (QOL) and to determine baseline factors associated with different courses of recovery.

This prospective study involved 977 patients treated at 10 high-volume spine centers in Japan. Eligible patients were adults diagnosed with DCM due to cervical spondylotic myelopathy (CSM) or ossification of the posterior longitudinal ligament (OPLL) who were scheduled to undergo cervical spine surgery. Patient related outcome measures (PROMs) including the Short Form-36 physical component summary (PCS) score, and the Japanese Orthopaedic Association Cervical Myelopathy Evaluation Questionnaire (JOACMEQ) for functional recovery. Evaluations were collected: preoperatively (baseline), and up to 24 months postoperatively.

The PCS scores were categorized as high functioning (High) or low functioning (Low) with this determination made at baseline and again at follow-up. Using these determinations, the patients were placed into one of four groups based on PCS scores, including Low-to-High (7.3%), High-to-High (44.9%),

Low-to-Low (37.7%), and Initial-Decline (10.1%). Multinomial logistic regression analysis identified preoperative lower extremity function as the strongest determinant of trajectory class. Age, history of smoking, symptom duration, and baseline cervical spine function were also significant predictors. Reduced cervical function independently predicted worse QOL at 24 months.

Conclusion: This study of patients who underwent surgery for degenerative cervical myelopathy found that preoperative lower extremity function was the strongest predictor of quality-of-life outcome.

Kitagawa, T., et al. Distinct Postoperative Quality of Life Trajectories After Surgery for Degenerative Cervical Myelopathy: A Multicenter Prospective Cohort Study. **Spine J.** 2026, March;26(3):525-535.

LONG-TERM EFFECTIVENESS OF CALCITONIN GENE-RELATED PEPTIDE MONOCLONAL ANTIBODIES FOR MIGRAINE

Evidence from randomized control trials has indicated that calcitonin gene-related peptide monoclonal antibodies (CGRP mAbs) are effective and well tolerated in patients with episodic or chronic migraine. As long-term comparisons of different CGRP mAbs are limited, this study evaluated the two-year effectiveness of three CGRP mAbs in routine clinical practice.

This single-center Japanese retrospective observational cohort study included 307 patients diagnosed with migraine who were prescribed erenumab, galcanezumab, or fremanezumab for ≥three months. Monthly migraine days were recorded using headache diaries. Also recorded were adverse events, and treatment persistence up to 24 months. Patients were categorized as nonresponders, early responders (by month three), late responders (months four and five), or ultra-late responders (after month six).

In the 307 patients, the monthly migraine days (MMDs) decreased from a mean of 17.5 days by 6.8, 7.9, 8.7, and 10.0 days at 3, 6, 12 and 24 months, respectively (all $p < 0.001$ vs. baseline). The ≥50% responder rates at these intervals were 45.9%, 57.0%, 63.6%, and 71.0% respectively. Adverse events occurred in 12.6% of patients and were listed as mild.

Conclusion: This study of patients with migraine headaches found that treatment with CGRP mAbs provided sustained long-term reductions in migraine frequency, with ≥50% responder rates of 71% at 24 months.

Suzuki, K., et al. A Real-World Study of CGRP Monoclonal Antibodies for Migraine: Long-Term Effectiveness and Treatment Adherence. **Eur J Neurol.** 2026, Mar 9;33(3):e70562.

EFFECT OF TAI CHI AND TDCS ON SPONTANEOUS NEURAL ACTIVITY IN MCI

According to the World Alzheimer Report, mild cognitive impairment (MCI) may be reversible or non-progressive over time. Clinical studies have demonstrated that targeting the dorsolateral prefrontal cortex (DLPFC) with tDCS can significantly improve memory performance. In addition, Tai Chi (TC) has been shown to enhance the global plasticity of the brain's functional networks and improve cognitive flexibility through regular training. This study explored the effects of TC and tDCS either alone or combined in patients with MCI.

This randomized 2 × 2 factorial trial assigned 128 patients with MCI to 12 weeks of TC, tDCS, TC combined with tDCS, or a health education control. Memory was assessed using the Chinese Wechsler Memory Scale-Revised (WMS-RC) memory quotient, Auditory Verbal Learning Test (AVLT), and Rey-Osterrieth Complex Figure Test (ROCF). Functional MRI was used to measure the amplitude of low-frequency fluctuations (ALFF), fractional ALFF, and regional homogeneity.

In the per-protocol analysis of 96 subjects, TC significantly improved WMS-RC memory quotient ($p < 0.001$), AVLT cued recall ($p= 0.042$) and recognition ($p = 0.005$), and increased ALFF/fALFF in the right middle/inferior temporal gyrus ($p < 0.05$).In addition tDCS significantly enhanced the memory quotient ($p< 0.001$), ROCF recall ($p = 0.030$), and AVLT recognition ($p = 0.013$), as well as modulated activity in the left postcentral gyrus, lingual gyrus, calcarine fissure, and bilateral frontal regions ($p < 0.05$). Significant TC × tDCS interaction was observed for AVLT immediate recall ($p = 0.016$).

Conclusion: This study of patients with mild cognitive impairment found that Tai Chi and tDCS independently and interactively improve memory function.

Liu, H., et al. Effect of Tai Chi and Transcranial Direct Current Stimulation on Spontaneous Neural Activity in Patients with Mild Cognitive Impairment: An Exploratory Resting-State Fmri Study. **Complement Ther Med.** 2026, April; 99:103382.

GUT DYSBIOSIS IN AXIAL CHRONIC LOW BACK PAIN

Recent studies have suggested that the gut microbiome may influence chronic pain risk or severity. This study compared the gut microbiome of low back pain patients with healthy controls.

Sixty adults (aged 45-75 years) were enrolled from an outpatient pain clinic and university volunteers. Fifty-five subjects (28 axial chronic low back pain, 27 controls) completed the Patient Reported Outcome Information System (PROMIS) pain and function measures. Rectal swabs were obtained for identification and quantification of the gut microbiome. Bacteria were identified that occurred in significantly different numbers between groups (>20-fold difference).

The microbiome analysis identified twenty-five bacterial species that differed between groups by at least 20-fold. The majority of these that were reduced in the back pain patients included key butyrate-, propionate-, and acetate-producing taxa. Five species were increased in the back pain group, notably formate-producing Ruminococcus gnavus and succinate-producing Phocaeicola plebeius.

Conclusion: This cross-sectional analysis identified a distinct proinflammatory/pronociceptive gut dysbiosis signature in adults with axial chronic low back pain.

Saravanan, A., et al. Evidence for a Shift Towards a Proinflammatory/ Pronociceptive Signature of Gut Dysbiosis in Patients with Axial Chronic Low Back Pain: A Preliminary Cross-Sectional Analysis. **J Pain.** 2026, April 15; 44:106271.

LOW DOSE CORTICOSTEROID AND PAIN AFTER KNEE ARTHROPLASTY

Glucocorticoids are widely used in perioperative pain management. Few randomized trials have specifically studied the effects of oral prednisolone on the short term clinical outcomes after a total knee arthroplasty (TKA). This study evaluated the effects on pain intensity

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and knee function in the early postoperative period of a TKA.

One hundred two adults, scheduled for TKA, were randomized to receive daily doses of celecoxib 400 mg plus prednisolone 10 mg (C+P) or celecoxib alone (C) for two weeks. Assessments were made preoperatively and at post-operative weeks 1, 2, 4, 12, and 24. The primary outcome was postoperative pain intensity measured using a visual analog scale (VAS).

From 99 patients who completed the study the C+P group reported lower VAS pain at rest at week one (p=0.04) and week two (p=0.03), better sleep quality at week two (p=0.03), higher knee function score at week two (p=0.05), and greater ROM at week four (p=0.05).

Conclusion: Low-dose oral prednisolone for two weeks after TKA reduced early pain and improved sleep quality, ROM, and knee function, though the benefits were modest and not sustained over time.

Ebrahimzadeh, M., et al. Systemic Low Dose Corticosteroid Improves Early Postoperative Knee Function and Pain Intensity in Patients Undergoing Unilateral Total Knee Arthroplasty: A Blinded Controlled Randomized Clinical Trial. **JBJS Open Access**. 2026, March 24; 11 (1). e25.00331.

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