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Volume 34 Number 2 | Published by Physicians In Physical Medicine and Rehabilitation | February 5, 2026

FISH OIL AND CARDIOVASCULAR EVENTS IN HEMODIALYSIS PATIENTS

Cardiovascular disease is the leading cause of death in patients receiving hemodialysis. This study evaluated whether daily supplementation with n-3 polyunsaturated fatty acids (fish oil) can reduce the rate of serious cardiovascular (CV) events in patients receiving hemodialysis.

This multicenter, double-blind, randomized, placebo-controlled trial was conducted at 26 sites in Canada and Australia. The subjects were 1,228 adults with a mean age of 64.3 years, each on maintenance hemodialysis, randomly assigned to receive four g/day of fish oil (1.6 g EPA and 0.8 g DHA) or corn oil placebo, stratified by site and prior CV event history. Follow-up was performed for up to 3.5 years (median 2.5 years). The primary endpoint was a composite of serious CV events (CV death, fatal/nonfatal MI, peripheral vascular disease leading to amputation, or fatal or nonfatal stroke).

Compared to the placebo group, the primary endpoint rate was lower in the fish oil group (0.61 versus 0.31 events per 1,000 patient-days; Hazard Ratio (HR) 0.57; $p<0.001$). The fish oil group also showed lower rates of cardiac death (HR 0.55), fatal/nonfatal MI (HR 0.56), amputation (HR 0.57), stroke (HR 0.37), and first CV event/any death (HR 0.73). Adherence was high, and bleeding rates were similar (4.8% versus 7.6%).

Conclusion: This study of patients receiving hemodialysis found that fish oil supplementation significantly lowered serious cardiovascular events.

Lok, C., et al. Fish Oil Supplementation and Cardiovascular Events in Patients Receiving Hemodialysis. **N Engl J Med.** 2026, January; 394: 128-138.

CINNAMON IMPROVES SYMPTOMS AND INFLAMMATION IN RHEUMATOID ARTHRITIS

Cinnamon (Cinnamomum spp.), known for its anti-inflammatory and antioxidant properties, shows promise as an adjunctive therapy for managing rheumatoid arthritis (RA). This study was designed to assess the effects of cinnamon supplementation on clinical symptoms, disease activity, and inflammatory markers in women with RA.

This randomized, double-blind, placebo-controlled trial included 36 women with RA. The women were randomly assigned to receive either cinnamon powder (2000 mg/day, administered as four 500 mg capsules) or a similar appearing placebo for eight weeks. Clinical outcomes included Disease Activity Score-28 (DAS-28), Visual Analog Scale (VAS) for pain, tender joint count, and swollen joint count. Serum inflammatory markers such as C-reactive protein (CRP) and tumor necrosis factor-alpha (TNF-α) were measured at baseline and at eight weeks. Data were analyzed using paired t-tests and repeated-measures ANOVA, with adverse events monitored for safety.

The cinnamon group experienced significant improvements in DAS-28 disease activity scores ($p < 0.001$), VAS pain scores ($p < 0.001$), reduced tender joint count ($p < 0.001$) and decreased swollen joint count ($p < 0.001$). In addition, inflammatory markers were substantially reduced, including CRP ($p < 0.001$) and TNF-α ($p < 0.001$). Diastolic blood pressure also improved ($p = 0.017$). No significant adverse events were reported in either group.

Conclusion: This study of women with rheumatoid arthritis found that cinnamon supplementation at 2000 mg per day could significantly alleviate pain, joint tenderness and swelling, lower disease activity, and decreases key inflammatory markers.

Shokri, Z., et al. Cinnamon Consumption Improves Clinical Symptoms and Inflammatory Markers in Women with Rheumatoid Arthritis: An Updated Randomized Controlled Trial Analysis. **Nutrients**. 2026, Feb;18(3):789. doi:10.3390/nu18030789

GINGER SUPPLEMENTATION FOR OSTEOARTHRITIS

Ginger (Zingiber officinale) has been shown to have anti-inflammatory bioactive compounds such as gingerols. This study investigated the efficacy and safety of ginger extract supplementation on knee pain, inflammatory markers, and overall symptoms in individuals with mild to moderate osteoarthritis (OA).

This double-blind, placebo-controlled study, included 30 adults with knee OA, randomized to receive either a standardized ginger extract (125 mg per day of a specialized, high-potency ginger extract, providing 12.5 mg/day of gingerols) or placebo for 58 days. The subjects performed a functional exercise challenge (3 × 10 squats/deep knee bends while holding 30% of their body mass) on days 0, 30, and 56, with recovery assessments two days post-exercise. The primary outcomes were the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) for pain, stiffness, and physical function, Markers of inflammation included cytokines and biomarkers such as IL-6, TNF-α, IL-1β, INF-γ (or IFN-γ), CRP (C-Reactive Protein), GM-CSF, and IL-5.

The ginger group experienced significantly reduced knee pain on standing and after activity ($p < 0.05$ in key measures), improved WOMAC total scores ($p < 0.05$), as well as pain stiffness and function ($p < 0.05$ for all). Reductions in inflammatory markers included IL-1β ($p = 0.050$), TNF-α ($p = 0.064$), GM-CSF ($p = 0.001$), and IL-5 ($p = 0.047$). Functional capacity improved over time, with fewer analgesic needs in

the ginger group. No major adverse events were reported.

Conclusion: This study of patients with knee osteoarthritic found that ginger supplementation can reduce pain, enhance functional capacity, and modulate inflammation.

Broeckel, J., et al. Effects of Ginger Supplementation on Markers of Inflammation and Functional Capacity in Individuals with Mild to Moderate Joint Pain. **Nutrients**. 2025, Jul;18 (2):456. doi:10.3390/nu18020456.

BOSWELLIA SERRATA EXTRACT FOR PAIN AND STIFFNESS IN MODERATE SPONDYLITIS

Inflammasomes activate the inflammatory response and induce pain. Nucleotide-binding domain, leucine-rich-containing family, pyrin domain-containing-3 (NLRP3) is the most widely studied inflammasome. Preclinical studies have shown that *Boswellia serrata Roxb.* and *Curcuma longa L.* (turmeric) extracts, can exhibit a synergistic action to alleviate inflammation and pain. However, both curcuminoids and boswellic acids possess poor oral bioavailability. This study examined the efficacy of bioavailability enhanced, full-spectrum Boswellia serrata extract (F -BSE) and its co-delivery with curcumin (C-BSE) for reducing pain and stiffness among patients with moderate spondylitis.

One hundred five adults with moderate spondylitis were randomly assigned to receive placebo, F-BSE (400 mg/day), or C-BSE (400 mg/ day) for 28 days. Efficacy was assessed using the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) for pain and stiffness and the Neck Disability Index (NDI) at baseline, day 14, and day 28. Inflammatory markers, the NLRP3 inflammasome and IL-1β levels were measured in the serum.

Compared to baseline, on day 14, the BASDAI neck/hip/back pain sub scores improved by 15.72% in the F-BSE group and 21.73% in the C-BSE group. By day 28 these had improved to 43.58% and 76.09% respectively ($p<0.001$ for all comparisons). Compared to baseline, on day 28, levels of NLRP3 improved by 29.62% in the F-BSE group and 39.27% in the C-BSE group ($p<0.001$ for both). Levels of IL-1β improved by 46.62% in the F-BSE group and 59.33% in the C-BSE group ($p<0.001$ for both).

Conclusion: This study of adults with moderate spondylitis found that bioavailability enhanced formulations of boswellic acids and curcumin can significantly reduce pain and inflammation.

Mamatha, K., et al. A Full-Spectrum Boswellia Serrata Extract with Enhanced Bioavailability, and Its Co-Delivered System with Curcumin Alleviate Pain and Stiffness Associated with Moderate Spondylitis: A Randomized Double-Blind, Placebo-Controlled, 3-Arm Study. **Front Pharmacol**. 2025, Jul;16:1577429. doi:10.3389/ fphar.2025.1577429.

CAFFEINATED COFFEE TO REDUCE ATRIAL FIBRILLATION

Caffeinated coffee has traditionally been considered proarrhythmic. It is commonly nominated by patients to be a frequent trigger for atrial fibrillation (AF) episodes, and physicians continue to advise that coffee reduction may minimize the effects of AF. The DECAF (Does Eliminating Coffee Avoid Fibrillation) study was designed to determine whether continued consumption of caffeinated coffee, affects the recurrence of AF or atrial flutter following successful electrical cardioversion.

This prospective open-label, multicenter randomized clinical trial included 200 current or recent coffee-drinking adults (mean age 69 years) with persistent AF or atrial flutter. After successful cardioversion to sinus rhythm, participants were randomized 1:1 to regular caffeinated coffee consumption (encouraged ≥1 cup daily, averaging about 1 cup/day) or complete abstinence from coffee (caffeinated and decaffeinated) and other caffeinated products for six months. The primary endpoint was clinically detected recurrence of AF or atrial flutter (≥30 seconds), confirmed by ECG, wearable monitors, or device electrograms.

Recurrence of AF or atrial flutter occurred in 47% of the 100 patients in the coffee consumption group and 64% of the 100 in the abstinence group, resulting in a 39% lower hazard of recurrence ($p= 0.01$). Time to recurrence was delayed in the coffee group relative to the abstinence group (hazard ratio of 0.61 ($p=0.01$)). No significant differences were observed in adverse events between groups.

Conclusion: This study of patients with atrial fibrillation found that after successful cardioversion, compared to abstinence from coffee, those who continued moderate

caffeinated coffee consumption had a 39% lower risk of recurrence.

Wong, C., et al. Caffeinated Coffee Consumption or Abstinence to Reduce Atrial Fibrillation: The DECAF Randomized Clinical Trial**. JAMA**.2026, January;335;(4):317-325.

SHINGLES VACCINE MAY SLOW DEMENTIA PROGRESSION

Given the key role of neuroinflammation in the development and progression of dementia, it is conceivable that neurotropic viruses could be a factor that causes or accelerates the dementia disease process. This study was designed to determine the effect of the herpes zoster (HZ) vaccination on new diagnoses of mild cognitive impairment (MCI) and deaths due to dementia among individuals living with dementia.

Data were obtained from 304,940 individuals born between September 1, 1925, and September 1, 1942, who were alive and residing in Wales as of September 1, 2013. Of these individuals, 282,557 had no record of cognitive impairment prior to September 1, 2013. Those who received the recombinant zoster vaccine (RZV; Shingrix) were compared to unvaccinated individuals or those receiving the older live-attenuated vaccine (Zostavax), for new onset dementia, worsening dementia or death.

During the nine-year follow-up period, among those with no record of cognitive impairment prior to the start date of the HZ vaccination program, 20,712 (7.3%) were newly diagnosed with MCI. Those who received the HZ vaccination experienced a 3.1 (p= 0.007) percentage point reduction in new diagnoses of MCI. Of those with a diagnosis of dementia prior to the start date of the HZ vaccination program, 7,049 (49.1%) died due to dementia. Those who received the HZ vaccination had a 29.5 (p = 0.046) percentage point reduction in deaths due to dementia. The HZ vaccination showed no impact on other major causes of morbidity or mortality. In subgroups with preexisting mild cognitive impairment, vaccinated individuals showed slower progression to dementia and modestly preserved cognitive scores compared with unvaccinated controls.

Conclusion: This study found that live-attenuated HZ vaccination prevents or delays mild cognitive impairment and dementia and slows the disease course among those already living with dementia.

Xie, M., et al. The Effect of Shingles Vaccination at Different Stages of The Dementia Disease Course. **Cell.** 2025;188(25):7049-7064.E20.

PLASMA PHOSPHO-TAU 217 AND AMYLOID BURDEN IN COGNITIVELY NORMAL OLDER ADULTS

Among the most promising biomarkers for Alzheimers Disease (AD) is plasma phosphorylated tau217 (p-tau217). This study was designed to better understand the efficacy of p-tau217 for identifying amyloid-positive individuals without cognitive impairment.

The authors conducted a comprehensive literature search of multiple databases to identify studies that reported baseline plasma p-tau217 levels in cognitively unimpaired older adults with participants classified as amyloid-positive or amyloid-negative. From this search 18 publications were included in a meta-analysis, encompassing 7,834 participants (2,533 amyloid-positive and 5,301 amyloid-negative). Amyloid burden was measured by positron emission tomography (PET) or cerebrospinal fluid (CSF) Aβ42/Aβ40 ratio.

Plasma p-tau217 levels were significantly higher in amyloid-positive than in amyloid-negative individuals (p<0.001). The meta-analysis of p-tau217 AUC values found high accuracy for differentiating amyloid-positive individuals from amyloid-negative individuals (AUC=0.87). The meta-analysis also found a large effect size (Hedges g=1.50).

Conclusion: This literature review confirms that plasma p-tau217 can reliably detect AD pathology in the preclinical stage.

Malek-Ahmadi, M., et al. Plasma Phosphorylated Tau 217 and Amyloid Burden in Older Adults Without Cognitive Impairment: A Meta-Analysis **JAMA Neurol**. 2026, Jan 1;83(1):13-19. doi:10.1001/jamaneurol.2025.4721.

SOMATIC SYMPTOM DISORDER AFTER MILD TRAUMATIC BRAIN INJURY

Mild traumatic brain injury (mTBI) may be a common precipitant of Somatic Symptom Disorder (SSD). This study examined the prevalence, correlates, predictors, and functional impact of SSD after mTBI.

This prospective cohort study included adults, 18-69 years of age with physician-diagnosed mTBI. Participants (n=223) completed baseline assessments within three months post-injury and follow-up at 6 –12 months. These included the Somatic Symptom Disorder-12 (SSD-12) questionnaire. In addition, assessments were made for depression, anxiety, and post-concussion symptoms at six months post-injury. Potential predictors were examined included pain intensity (Numeric Rating Scale), post-concussion symptom severity (Rivermead Post-Concussion Symptoms Questionnaire), and the Illness Perceptions Questionnaire. Disability was measured with the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0).

The SSD criteria were met by 24% of participants at follow-up. Multivariable logistic regression showed significant independent associations with higher baseline pain (p=0.003), greater post-concussion symptom burden (p=0.004), and more pessimistic early beliefs about symptom duration and impact (p<0.001). Individuals with SSD had markedly higher WHODAS 2.0 scores indicating greater disability (p<0.001) compared with those without SSD.

Conclusion: This study of patients diagnosed with mild traumatic brain injury found that Somatic Symptom Disorder emerges in about one-quarter of patients, and is strongly linked to early pain, post-concussion symptoms, and worse disability.

Silverberg, N., et al. Somatic Symptom Disorder After Mild Traumatic Brain Injury. **J Head Trauma Rehabil.** 2026, Jan/Feb;41 (1):E18-E26.

COMBINING ANODAL TDCS WITH ROBOT-ASSISTED GAIT TRAINING IN STROKE

This research investigates the synergistic effects of anodal transcranial direct current stimulation (tDCS) paired with robot-assisted gait training (RAGT) on lower limb motor recovery and cortical regulation in stroke survivors.

This randomized controlled trial included 43 stroke patients (anodal tDCS + RAGT group: n=22; RAGT alone group: n=21) with hemiparesis, recruited from a rehabilitation setting.

Participants underwent 20 sessions (five days/week for four weeks) of RAGT using an exoskeleton device. The intervention group received concurrent anodal tDCS (2 mA, 20 minutes) over the affected primary motor cortex leg area during training, while the control group received sham stimulation. Primary outcomes included the Fugl-Meyer Assessment for Lower Extremity (FMA-LE), 10-Meter Walk Test (10MWT), Berg Balance Scale (BBS), and Functional Ambulation Category (FAC). Motor cortex regulation was assessed via motor-evoked potentials (MEPs) using transcranial magnetic stimulation (TMS) to measure corticospinal excitability, resting motor threshold (RMT), and MEP amplitude before and after intervention.

The anodal tDCS + RAGT group showed significantly greater improvements in FMA-LE ($p < 0.001$), 10MWT speed ($p < 0.01$), BBS ($p < 0.05$), and FAC ($p < 0.05$) compared to RAGT alone. The MEP amplitude increased more markedly in the intervention group ($p < 0.001$), with reduced RMT ($p < 0.01$), indicating enhanced corticospinal excitability and better motor cortex facilitation. No serious adverse events occurred.

Conclusion: This study of stroke survivors found that anodal transcranial direct current stimulation augments the effects of robot-assisted gait training on lower limb motor function and promotes favorable motor cortex regulation.

Zhang, Y., et al. The Effects of Combining Anodal Transcranial Direct Current Stimulation with Robot-Assisted Gait Training on Lower Limb Motor Function and The Motor Cortex Regulation of Stroke Patients. **J Neuroeng Rehabil**. 2025, Oct;22 (1):230. doi:10.1186/s12984-025-01731-8.

CLOSED-LOOP VAGUS NERVE STIMULATION IN CHRONIC STROKE

Paired vagus nerve stimulation (VNS) therapy has emerged as a novel strategy to enhance recovery of arm and hand function in individuals with chronic stroke. This study was designed to determine whether a miniaturized closed-loop VNS could facilitate lasting motor recovery in patients with chronic ischemic stroke.

The subjects were 15 adults with a chronic stroke and persistent upper limb hemiparesis (Fugl-Meyer Assessment Upper Extremity [FMA-UE] score 18–45). Participants received a surgically implanted miniaturized VNS device (no external lead) that detected volitional arm movements via integrated accelerometry and delivered brief stimulus bursts (0.5–1.0 mA, 30 Hz, 500 μs pulse width). This was paired with intensive task-specific rehabilitation (three sessions/week for six weeks, followed by home-based maintenance). The primary outcome was change in FMA-UE at six weeks, three months, and twelve months post-implantation. Secondary outcomes included Action Research Arm Test (ARAT), Box and Block Test (BBT), Wolf Motor Function Test (WMFT), and adverse events.

The FMA-UE scores improved significantly from baseline (mean 29.4) to six weeks (mean +8.7 points, $p<0.001$), with gains maintained at three months (+9.2 points, $p<0.001$) and 12 months (+10.1 points, $p<0.001$). Significant improvement was also noted in secondary scores on the ARAT ($p<0.001$), BBT ($p<0.01$), and WMFT time reduction ($p<0.05$). No serious device-related adverse events occurred.

Conclusion: This study of adults with a chronic stroke found that closed-loop miniaturized vagus nerve stimulation paired with rehabilitation produces significant and lasting upper limb motor recovery.

Hays, S., et al. Closed-Loop Vagus Nerve Stimulation Delivered with a Miniaturized System Produces Lasting Recovery in Individuals with Chronic Stroke**. Stroke**. 2026;57(1). doi:10.1161/ STROKEAHA.125.052937.

BLOOD PRESSURE AND RENAL FUNCTION DECLINE IN APPARENTLY HEALTHY ADULTS

Multiple prospective studies have reported an association between blood pressure (BP) and the risk of renal function decline (RFD) in individuals without pre-existing kidney disease. This research examines the link between blood pressure levels and the progression of renal function decline in adults who initially have normal kidney function.

Data were obtained from the Tehran Lipid and Glucose Study, an ongoing population-based prospective cohort in Iran. Apparently healthy adults with preserved baseline kidney function (eGFR ≥60 mL/min/1.73 m² and no proteinuria) were followed longitudinally, with blood pressure assessed at routine visits. Renal function decline was assessed via repeated eGFR. Participants were followed with a median follow-up of 15.3 years. The primary outcome was RFD, defined as an eGFR of <60 mL/min/1.73 m² accompanied by a≥30% decrease from baseline eGFR values.

A total of 3,455 participants (2,337 women) with a mean age of 37.8 years (SD: 13.3) were included. During follow-up, 245 participants (7.1%) developed RFD. Compared with individuals with SBP < 100 mm Hg, those with SBP levels of 100–109, 110–119, and 120–139 mm Hg had HRs of 1.46 (95% CI: 0.93–2.29), 2.15 (1.38–3.34), and 3.89 (2.52–5.99), respectively (p for trend < 0.001). For DBP, the corresponding HRs for those with levels of 70–74, 75–79, and 80–89 mm Hg were 1.34 (0.91–1.95), 2.17 (1.50–3.13), and 3.01 (2.16–4.21), respectively, compared with individuals with DBP < 70 mm Hg (p for trend < 0.001).

Conclusion: This study of apparently healthy adults free of conventional cardiometabolic risk factors found that higher blood pressure levels, particularly DBP, were associated with an increased risk of renal function decline.

Ebrahimi, N., et al. Blood Pressure and Renal Function Decline in Apparently Healthy Adults: The Tehran Lipid and Glucose Study. **J Hum Hypertens.** 2026, Jan 26. doi: 10.1038/s41371-025-01107-4.

ANTITHROMBOTIC THERAPY AFTER SUCCESSFUL CATHETER ABLATION FOR ATRIAL FIBRILLATION

This study was designed to determine whether rivaroxaban could reduce thromboembolic events compared with aspirin in patients with successful atrial fibrillation (AF) ablation.

The Optimal Anticoagulation for Enhanced Risk Patients Post-Catheter Ablation for Atrial Fibrillation (OCEAN) trial was an international, open-label, randomized, blinded-outcome-assessment study involving 1,284 patients who had undergone successful catheter ablation for AF at least one year earlier and had a CHA2DS2-VASc score of one or more (or ≥2 for women). Participants were randomized to rivaroxaban (15 mg daily) or aspirin (70-120 mg daily), with outcomes including a composite of stroke, systemic embolism, or new covert embolic stroke.

A primary-outcome event occurred in 0.8% in the rivaroxaban group and in 1.4% in the aspirin group (p=0.28). Stroke or systemic embolism occurred in 0.8% of the rivaroxaban group and in 1.1% of the aspirin group. New cerebral infarcts measuring less than 15 mm occurred in 22 of 568 patients (3.9%) in the rivaroxaban group and in 26 of 590 patients (4.4%) in the aspirin group.

Conclusion: Among patients with successful catheter ablation for atrial fibrillation at least one year earlier and risk factors for stroke, this study found that rivaroxaban did not significantly reduce the incidence of stroke, systemic embolism, or new covert embolic stroke compared with aspirin.

Verma, A., et al. Antithrombotic Therapy after Successful Catheter Ablation for Atrial Fibrillation. **N Engl J Med**. 2026, January;394(4): 323-332.

COMPARABLE EFFICACY OF BETAMETHASONE AND TRIAMCINOLONE IN KNEE OA

Intra-articular corticosteroid injections are a common nonoperative treatment for pain relief and functional improvement in knee osteoarthritis (OA). This study was designed to compare the efficacy of single intra-articular injections of betamethasone (long-acting) versus triamcinolone acetonide (intermediate-acting) in patients with symptomatic knee OA.

This single-center, double-blinded, randomized controlled trial enrolled 120 patients with knee OA, who were randomized to receive either a 7-mg betamethasone or 40-mg triamcinolone acetonide injection. Participants were followed for six months after the injection. The primary outcome was pain at rest, using a visual analog scale (VAS). Secondary outcomes included VAS pain during movement, modified Western Ontario and McMaster Universities Arthritis Index (WOMAC) score, knee flexion angle, UCLA activity score, Timed Up-and-Go test, 2-minute walk test, and side effects.

Both groups showed significant reductions in VAS pain at rest from day one up to six months, with no significant differences between betamethasone and triamcinolone acetonide in VAS pain, functional scores, or performance-based outcomes. Similar improvements occurred in secondary measures without between-group differences.

Conclusion: This study of adults with OA of the knee found that intrarticular injections of betamethasone and triamcinolone acetonide demonstrated comparable efficacy for pain relief and functional improvement.

Wattanasirisombat, K., et al. Betamethasone and Triamcinolone Acetonide Have Comparable Efficacy as Single Intra-Articular Injections in Knee Osteoarthritis: A Double-Blinded, Randomized Controlled Trial. **J Bone Joint Surg Am**. 2026 Jan;108(1):35-44.

DUAL ANTIPLATELET THERAPY IN MILD ISCHEMIC STROKE AND TIA

Patients with mild ischemic stroke (mIS) or transient ischemic attack (TIA) face a high early risk of recurrent stroke. While prior trials and guidelines support short-term dual antiplatelet therapy (DAPT), mainly when initiated within 24 hours, uncertainty persists about extending the time window to 72 hours after symptom onset. This study was designed to better understand the effects of dual antiplatelet therapy (DAPT) in these patients.

The authors completed a meta-analysis of randomized controlled trials identified through searches of PubMed, Embase, Cochrane Library, and ClinicalTrials.gov up to 2025. Inclusion criteria required trials that compared DAPT (aspirin + clopidogrel or similar) and monotherapy (usually aspirin alone) started within 72 hours in adults with a mIS (NIHSS ≤3) or high-risk TIA ($ABCD^2$ score ≥4). The primary outcome was composite of stroke, myocardial infarction, or vascular death at 90 days. The primary safety outcome was major bleeding.

Seven trials (n=15,678 participants) met the inclusion criteria, with DAPT significantly reducing the primary composite outcome (RR=0.76, p<0.001) compared with monotherapy. This benefit was driven by reduced recurrent IS (RR=0.71, p<0.001). Major bleeding risk was modestly increased with DAPT (RR=1.85, p=0.003), though absolute rates remained low (0.9% vs 0.4%). A subgroup analyses showed consistent efficacy across trials starting DAPT within 24 hours and treatment durations of 21–90 days.

Conclusion: This study found that dual antiplatelet therapy initiated within 72 hours after mild ischemic stroke or high-risk transient ischemic attack significantly reduces recurrent vascular events with a small but statistically significant increase in major bleeding risk.

Xie, J., et al. Impact of Dual Antiplatelet Therapy Within 72 Hours Post Mild Ischemic Stroke and Transient Ischemic Attack: Meta-Analysis. **Brain Inj**. 2026;40(2):98-106. doi:10.1080/02699052.2025.2584422.

ORGAN-SPECIFIC PROTEOMIC AGING CLOCKS PREDICT DISEASE AND LONGEVITY

Aging is a complex biological process, shaped by both environmental and genetic factors. Substantial progress has been made in the development of aging clocks based on diverse clinical or omics-based biomarkers. This study was designed to develop organ-specific aging clocks and to evaluate their ability to predict disease onset, progression, mortality, and related risks.

The authors used data from a large proteomic dataset from the UK Biobank (UKB; n = 43,616), and two independent external validation cohorts: 3,977 Chinese participants from the CKB, and 800 US participants from the National Health Service. Plasma proteomic profiling was conducted in all three cohorts, measuring 2,916 proteins. Nonlinear machine learning generated ten organ-specific clocks. Associations with diseases, mortality, and other factors were then assessed.

Accelerated organ aging significantly predicted incident diseases, disease progression, multimorbidity, and mortality independent of clinical and genetic risks. Brain aging showed the strongest link to mortality (Hazard Ratio (HR)=1.44 per 1-SD) and neurodegeneration (all-cause dementia HR=1.88, Alzheimer's progression HR=1.89). Kidney aging strongly predicted chronic kidney disease (HR=1.78) and intestine aging predicted type 2 diabetes (HR=2.08).

Conclusion: This study found that organ-specific proteomic aging clocks outperform traditional measures in predicting morbidity and mortality.

Wang, Y., et al. Organ-Specific Proteomic Aging Clocks Predict Disease and Longevity Across Diverse Populations. **Nat Aging**.

2026;6(1). 162–180. Doi:10.1038/S43587-025-01016-8.

HIP AND GROIN INJURIES IN SPORT

Hip and groin injuries (HGI) are common in competitive sports. This study was designed to systematically review the incidence, burden, prevalence, and proportion of HGI relative to all injuries in competitive sports.

The authors conducted a systematic review of the literature and identified 71 studies that reported 5,914 hip and groin injuries over 9,441,381 exposure hours in competitive athletes. Pooled estimates were calculated for incidence (per 1000 hours), burden (days lost per 1000 hours), prevalence, and proportion of total injuries.

Hip and groin injuries represented 11% of all injuries, with 6% adductor related, 1% iliopsoas related with inguinal, pubic and hip-related injuries representing <1%. The overall injury burden rate for HGI was 11.5 days lost per 1000 hours of exposure.

Conclusion: This systematic review with meta-analysis of sports injuries found that 11% are hip and groin injuries.

Quintana-Cepedal, M., et al. Epidemiology of Hip and Groin Injuries in Sport: A Systematic Review with Meta-Analysis and Meta-Regression Of 5,914 Injuries from Over 9 Million Exposure Hours. **Br J Sports Med**. 2026. doi:10.1136/bjsports-2024-109441.

HEALTH OUTCOMES OF SMALL CHANGES IN PHYSICAL ACTIVITY

With the increased use of personal devices that measure physical activity, large data sets have been created with objective rather than subjective estimates of activity. This study was designed to use these data to better understand how modest adjustments in moderate-to-vigorous physical activity (MVPA) and sedentary behavior could impact all-cause mortality.

The authors completed a literature search for studies with device-measured physical activity and sedentary time. From these data calculations were made about the amount and type of physical activity. These included sedentary, light-intensity physical activity (LPA), and MVPA. The time spent in each was compared to death records. Covariates were obtained from each subject, including height and weight, BMI, smoking habits, education, and history of cardiovascular disease, cancer, and diabetes.

The analysis included data from 135,046 participants with a mean age of 63.9 years. The group spent an average of 27.7 min/day in MVPA and 577 min/day (64·5% of wear time) in sedentary activity. Estimates were made of the relative changes in risk for mortality associated with 5-min and 10-min increases in MVPA from observed values across the MVPA distribution.

A five-minute increase in MVPA (from one min/day to six min/day) was associated with an approximately 30% lower mortality risk while a 10-min/day increase (from one minute per day to 11 minutes per day) with an approximately 42% lower mortality risk. Beyond approximately 24 min/day, no clear risk reduction was evident.

Conclusion: This large study found that small increases in moderate to vigorous physical activity or reductions in sedentary time could prevent a meaningful proportion of deaths.

Ekelund, U., et al. Deaths Potentially Averted by Small Changes in Physical Activity and Sedentary Time: An Individual Participant Data Meta-Analysis of Prospective Cohort Studies. **Lancet.** 2026, January 24;407(10526):339-349.

TENECTEPLASE FOR ACUTE ISCHEMIC STROKE 4.5–24 HOURS

Studies of patients with an acute ischemic stroke have shown that Tenecteplase when administered within 4.5 hours of symptom onset could significantly increase the proportion of patients achieving excellent functional outcome at 90 days. This study explores the efficacy and safety of Tenecteplase when administered up to 24 hours from symptom onset.

A systematic literature search was performed using PubMed, Embase, the Cochrane Library, and ClinicalTrials.gov from inception to July 1, 2025 for randomized controlled trials including adults with acute ischemic stroke treated with Tenecteplase within a 4.5–24-hour window. The primary outcome was excellent functional outcome (modified Rankin Scale [mRS] 0–1 at 90 days); secondary outcomes included mRS 0–2, early neurological improvement, successful reperfusion, and safety endpoints (symptomatic intracranial hemorrhage [sICH], any ICH, mortality).

Six RCTs (n=2,847 participants) met the inclusion criteria. Tenecteplase significantly increased excellent functional outcome (mRS 0–1: p=0.02) and independent outcome (mRS 0–2: p=0.003) compared with the control. The risk of sICH was not significantly increased (RR=1.62: p=0.10), though any ICH was elevated (RR=1.38: p=0.008). Mortality did not differ (RR=0.94: p=0.51).

Conclusion: Tenecteplase administered 4.5 to 24 hours after acute ischemic stroke onset improves functional outcomes with an acceptable safety profile.

Wang, Z., et al. Tenecteplase for Acute Ischemic Stroke at 4.5 to 24 Hours: A Meta-Analysis of Randomized Controlled Trials**. Stroke**. 2026, January;57(1). doi:10.1161/STROKEAHA.125.053256.

SGLT2 INHIBITORS AND KIDNEY OUTCOMES

As studies of sodium-glucose cotransporter 2 (SGLT2) inhibitors have produced consistent evidence of kidney protection, this study examined the effects of these medicines on kidney outcomes in patients with varying levels of kidney function and albuminuria.

Individual participant data were obtained from ten large randomized, placebo-controlled trials in the SGLT2 Inhibitor Meta-Analysis Cardio-Renal Trialists' Consortium (SMART-C). These trials included adults with type 2 diabetes, chronic kidney disease (CKD), or heart failure. The primary outcome was CKD progression (composite of kidney failure, ≥50% eGFR decline, or death from kidney failure), with additional outcomes of annual eGFR decline and kidney failure alone.

In 70,361 participants, compared to placebo, SGLT2 inhibitors reduced CKD progression (25.4 vs. 40.3 events per 1000 patient-years; Hazard Ratio (HR) 0.62, p<0.001). This benefit was consistent irrespective of baseline eGFR and albuminuria. SGLT2 inhibitors also slowed the annual eGFR decline across subgroups and reduced the risk of kidney failure risk (HR 0.66).

Conclusion: This meta-analysis found that SGLT2 inhibitors significantly lower the risk of CKD

progression and kidney failure regardless of baseline eGFR or albuminuria, supporting their routine use across the full spectrum of kidney function.

Neuen, B., et al. SGLT2 Inhibitors and Kidney Outcomes by Glomerular Filtration Rate and Albuminuria: A Meta-Analysis. **JAMA.** 2026, January;335(3):233-244.

SLEEP DURATION TRAJECTORIES AND COGNITIVE IMPAIRMENT

The long-term associations between dynamic changes in sleep duration over extended periods and the subsequent risk of cognitive impairment in older adults remain incompletely understood. This study was designed to examine how distinct 13-year trajectories of sleep duration relate to the incidence of cognitive impairment.

This cohort study was conducted in China over 13 years. Sleep duration was repeatedly self-reported, and group-based trajectory modeling was applied to classify participants into distinct sleep duration change patterns. Cognitive impairment was determined using validated instruments, including the Mini-Mental State Examination. Adjusted hazard ratios for incident cognitive impairment were calculated with multivariable Cox proportional hazards regression models that controlled for key demographic, lifestyle, and health-related confounders.

Among 1,882 elderly participants, 246 (13.07%) developed cognitive impairment during follow-up. Four sleep duration trajectories emerged: decreasing (25.19%), increasing (50.48%), decreasing-increasing (9.88%), and increasing-decreasing (14.45%). Using the decreasing trajectory as reference, the adjusted hazard ratios were 1.63 (1.14–2.32) for increasing, 1.74 (1.08–2.81) for decreasing-increasing, and 2.54 (1.67 –3.85) for increasing-decreasing trajectories (all $p<0.05$).

Conclusion: Fluctuating or increasing sleep duration trajectories over 13 years were linked to a significantly elevated risk of cognitive impairment compared with a decreasing trajectory in this elderly Chinese cohort.

Li, R., et al. Sleep Duration Trajectories and Cognitive Impairment Among Elderly: A 13-Year Cohort Study in China**. BMC Geriatr.** 2026. Doi:10.1186/S12877-026-07001-Z

UNDIAGNOSED AND UNCONTROLLED HYPERTENSION AT A FEDERALLY QUALIFIED HEALTH CENTER

Myocardial infarction (MI), stroke, heart failure, end-stage renal disease, and death are all associated with elevated blood pressure, with up to 36% of these events attributable to hypertension. This research was designed to assess the efficacy of blood pressure (BP) control at a Federally Qualified Health Center (FQHC).

Data were obtained from the medical records of the Piedmont Region of North Carolina, an FQHC covering 14 counties in North Carolina. Hypertension was defined using 2025 ACC/AHA guidelines as average BP≥130/80 mmHg. Uncontrolled hypertension referred to elevated BP irrespective of treatment status. Adjusted mixed-effects logistic regression models identified associated factors, adjusting for confounders.

Undiagnosed hypertension rates ranged from 28.7% in 2019 to 34.7% in 2023. Uncontrolled hypertension rates ranged from 74.0% to 79.5%. Risk factors for undiagnosed hypertension included older age (Odds Ratio (OR) 1.04), male sex (OR 2.9), and Black race (OR 1.3), all $p<0.05$.

Conclusion: This study of adults seen at a large federally qualified health center found that 1/3 of the patients have undiagnosed hypertension, and of those with diagnosed hypertension, 3/4 are not controlled.

Shah, A., et al. Undiagnosed and Uncontrolled Hypertension at a Federally Qualified Health Center. **J Hum Hypertens.** 2026.doi: 10.1249/MSS.0000000000003834.

UNDIAGNOSED CONCUSSIONS IN COLLEGIATE ATHLETES

This study was designed to determine the proportion of concussions that go undiagnosed in collegiate athletes, and to compare symptom duration, severity, and other outcomes between diagnosed and undiagnosed cases.

This retrospective analysis included 1,042 collegiate athletes from multiple sports who sustained a concussion during their athletic career. Participants completed structured interviews and validated questionnaires assessing concussion history, including whether the injury was formally diagnosed by medical staff. Symptom duration (time to symptom resolution) and severity were measured using the Sport Concussion Assessment Tool (SCAT) symptom checklist and other standardized scales.

Of the 1,042 concussions reported, 53% (n=553) were undiagnosed. Athletes with undiagnosed concussions had significantly longer symptom duration (mean 18.2 days vs 11.4 days $p<0.001$) and greater symptom severity scores (mean 32.1 vs 24.6, $p<0.001$). Undiagnosed cases were more likely to occur during practice (68% vs 42%, $p<0.001$) and in contact sports other than football. No significant differences were found in baseline symptom reporting or prior concussion history between groups, but undiagnosed athletes were less likely to report immediate symptoms to staff ($p<0.001$).

Conclusion: Over half of concussions in collegiate athletes remain undiagnosed, and both diagnosed and undiagnosed injuries are associated with prolonged symptom duration and increased severity.

Bartels H., et al. The Prevalence of Undiagnosed Concussions and Their Associations With Current Symptom Reporting in Collegiate-Aged Athletes. **J Head Trauma Rehabil**. 2026;41(1):45-54. doi:10.1097/HTR.0000000000000960.

OLEZARSEN FOR SEVERE HYPERTRIGLYCERIDEMIA

The efficacy and safety of olezarsen, an antisense oligonucleotide targeting apolipoprotein C-III, in significantly reducing triglyceride levels was not fully established in large-scale phase 3 trials. This study evaluated the effects of monthly subcutaneous olezarsen (50 mg or 80 mg) versus placebo on triglyceride levels and pancreatitis incidence in patients with severe hypertriglyceridemia.

The authors conducted two phase 3, international, multicenter, double-blind, randomized, placebo-controlled clinical trials (the CORE-TIMI 72a trial, the CORE2-TIMI 72b). These trials included patients with severe hypertriglyceridemia (fasting triglycerides ≥500 mg/dL) randomized to receive daily doses of 50 mg, 80

(Continued from page 2)

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mg, or placebo monthly for 12 months. The primary endpoint was the placebo-adjusted percent change in triglyceride levels from baseline at six months.

In the pooled analysis of 1,061 patients (617 in CORE-TIMI 72a and 444 in CORE2-TIMI 72b), olezarsen significantly reduced triglycerides at six months, with placebo-adjusted least-squares mean changes of −62.9 percentage points (50 mg) and −72.2 percentage points (80 mg) in CORE-TIMI 72a, and −49.2 percentage points (50 mg) and −54.5 percentage points (80 mg) in CORE2-TIMI 72b ($p<0.001$ for all comparisons). The incidence of acute pancreatitis was markedly lower with olezarsen (mean rate ratio 0.15; $p<0.001$).

Conclusion: This study of patients with severe hypertrigyceridemia found that olezaren could reduce triglyceride levels and the incidence of pancreatitis.

Marston, N., et al. Olezarsen for Managing Severe Hypertriglyceridemia and Pancreatitis Risk. **N Engl J Med**. 2026;394(5):429-441.

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ISSN # 1081-1303