

## Abstract

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## GP-01

### Adverse childhood experiences and the development of chronic pain: A structured life course modelling approach in the avon longitudinal study of parents and children

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**Background:** Adverse childhood experiences (ACEs), including maltreatment, family dysfunction, and social or environmental adversity, are determinants of poorer health in adulthood. Chronic pain is one of the outcomes most consistently associated with childhood adversity, yet the patterns through which early-life exposures shape long-term vulnerability remain insufficiently understood. Most previous studies rely on retrospective reporting and treat ACEs as a simple “ever/never” exposure or use summary adversity scores. Understanding whether particular developmental periods confer heightened susceptibility, or whether repeated adversity across childhood is most harmful, is essential for informing prevention and early intervention strategies. Life-course epidemiology provides a framework to examine how the timing and pattern of exposures influence later outcomes, and recent methodological developments now allow formal comparison of competing hypotheses.

**Aim:** To determine whether the association between ACEs and chronic multi-site troublesome pain in early adulthood is best explained by (i) accumulation of exposure across developmental periods, (ii) sensitive or critical periods in childhood, (iii) recency effects (exposures closer to adulthood), (iv) instability (changes in exposure status), or (v) pathway models in which earlier adversity increases the likelihood of later adversity.

**Methods:** We analysed data from the Avon Longitudinal Study of Parents and Children (ALSPAC). Nineteen ACE categories were derived using established methods and assessed within four developmental periods: early childhood (0–4 years), middle childhood (5–9), early adolescence (10–13), and late adolescence (14–18). Summary ACE measures included: “any ACE”, any of a subset of ACEs (defined by CDC–Kaiser Permanente), and polyadversity ( $\geq 4$  ACE types). The outcome was chronic multi-site troublesome pain at age 26. We applied a Structured Life Course Modelling Approach (SLCMA), using Lasso selection to identify the hypothesis (or combination of hypotheses) that best explained the data. Logistic regression models were adjusted for early-life confounders identified through a directed acyclic graph: birthweight, maternal age, maternal smoking, maternal ACEs, parity, overcrowding, social class, and

ethnicity. Analyses were stratified by sex and performed on multiply imputed datasets to address item-level missingness.

**Results:** 14,671 participants (7,480 males; 7,191 females) were included. At age 26, 14.3% of participants presented with chronic multi-site troublesome pain. Prevalence of ACEs varied by developmental period but was highest in early and middle childhood. Across all summary ACE measures, accumulation was the dominant life-course pattern. For “any ACE”, an exponential accumulation model best explained chronic pain risk (males OR 1.06, 95% CI 1.04–1.07; females OR 1.04, 95% CI 1.03–1.05 per unit increase in squared number of periods exposed). For polyadversity, linear accumulation was selected (males OR 1.46; females OR 1.35 per additional period of exposure). Most individual ACEs followed an accumulation pattern, although notable exceptions emerged. Recency effects were identified for household substance misuse, poor parent/child bond, and, among females, bullying. A critical period in early adolescence (10–13 years) was identified for lack of social support in males. Few ACEs were adequately explained by a simple “ever exposed” model, highlighting the inadequacy of collapsing adversity histories into dichotomous or cumulative scores.

**Conclusion:** Prospectively collected longitudinal data provide strong evidence that repeated exposure to adversity across multiple developmental periods, rather than isolated events, best explains the development of chronic multi-site pain in adulthood. Certain adversities exert greater influence when experienced later in childhood, and early adolescence may be a period of particular vulnerability for social support deficits. Findings emphasise the need for trauma-informed approaches, prevention strategies that span the entire course of childhood, and interventions that address ongoing and cumulative adversity rather than focusing solely on early-life exposures.

## GP-02

### Cancer-associated fibroblasts drive sensory nerve sensitisation in pancreatic cancer pain

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**Background:** Pain is a debilitating and under-treated aspect of cancer care. In pancreatic ductal adenocarcinoma (PDAC), pain often presents early, intensifies with disease progression, and becomes increasingly treatment resistant. This profoundly impairs quality of life and contributes to PDAC’s dismal prognosis, with 5-year survival <7%. Improved understanding of tumour–nerve interactions therefore presents an opportunity to develop targeted therapies for cancer pain.

PDAC is characterised by a dense, desmoplastic stroma that can comprise up to 80% of the tumour mass. Central to this stroma are cancer-associated fibroblasts (CAFs), which play key roles in driving disease progression. However, the contribution of CAFs to tumour-nerve interactions and cancer pain remains poorly understood.

**Aim:** Emerging evidence implicates fibroblasts as active drivers of pain in non-malignant conditions, including arthritis (1). In parallel, our work has identified CAFs as key nodes for ephrin signalling (2), a bi-directional family of cues with established roles in pain regulation. We therefore hypothesise that CAFs promote cancer pain via CAF-nerve ephrin signalling, positioning the ephrin pathway as a candidate therapeutic target.

**Methods:** To investigate tumour-nerve interactions, we have developed a tractable, humanised in vitro model leveraging recent advances in induced pluripotent stem cell (iPSC) technology to generate functional human sensory neurons (3). These neurons express key sensory markers and exhibit robust stimulus-evoked activity. Using compartmentalised microfluidic devices, we spatially separate neural soma and axons, mimicking peripheral projections into the pancreas. Tumour components, including cancer organoids, CAFs, and immune cells, can then be introduced into the axonal compartment. This creates a controlled tumour-nerve microenvironment to interrogate CAF-mediated pain signalling.

**Results:** iPSC-derived sensory neurons cultured with CAFs show increased expression and activation of EPH receptors. These CAF-educated neurons show enhanced NMDA-evoked calcium responses compared to those cultured with normal fibroblasts. These responses are abrogated by first-in-class ephrin signalling inhibitors (2), which is consistent with ephrin-mediated sensitisation of NMDA receptors. Supporting clinical relevance, nerve fibres within PDAC patient samples display elevated EPH receptor expression compared with fibres in adjacent non-tumour tissue.

**Conclusion:** Together, this work establishes a tractable, humanised model to study tumour-nerve interactions and identifies CAF-derived ephrin signalling as a promising therapeutic target for cancer pain.

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## GP-03

### Characterising iPSC-derived sensory neurons for the development of an in vitro arthritic-chronic pain model

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**Background:** Musculoskeletal disorders, including osteoarthritis (OA) and rheumatoid arthritis (RA), affect millions worldwide and are characterized by chronic pain, progressive joint damage and impaired mobility.<sup>1,2</sup> Despite advances in pain management, approximately 60% of RA patients report dissatisfaction with their pain control<sup>2,3</sup> and 10-34% OA patients continue to experience long-term pain following joint-replacement surgery.<sup>1</sup> Therefore, pharmacological interventions for pain relief continues to be an unmet need for both OA and RA patients. Gaining a better understanding of the molecular mechanisms underlying chronic joint pain is fundamental for identifying novel drug targets. Although several in vitro OA and RA models have been developed, they do not fully recapitulate the complex joint microenvironment and rarely focus on neuron-joint cell interactions.<sup>4</sup> In vitro models that investigate neuro-immune and neuro-skeletal interactions, can accelerate the discovery of novel drug targets for chronic pain. Recent advances in the establishment of sensory neuron differentiation protocols from human embryonic and induced pluripotent stem cells (iPSC) have provided an alternative to human and rodent dorsal root ganglion (DRG) tissue for modelling peripheral sensory neuron-related diseases in vitro.<sup>5,6</sup>

**Aim:** To optimise the derivation of humanised iPSC-derived peripheral sensory neurons (iPSC-SNs), perform gene expression analysis of key markers, and functionally characterise nociceptor-specific populations.

**Methods:** iPSC-SNs were commercially obtained (Anatomic Inc.) and cultured according to manufacturer protocols for 50 days in vitro.<sup>7</sup> Cells were morphologically characterised across maturation timepoints via phase-contrast imaging and automated image segmentation (using Incucyte Neurotrack Software, Sartorius), by evaluating changes in neurite and cell-body morphology. This method was used to optimise cell-seeding density. Alterations in gene expression of key early differentiation, sensory-neuron and nociceptor-specific markers were determined by qRT-PCR across maturation timepoints. The expression of some markers was examined at a protein level via immunofluorescence staining.<sup>8</sup> Functional expression of nociceptive ion channels was confirmed using fluorescence imaging plate reader (FLIPR)-based calcium imaging. Finally, we probed the intrinsic electrical properties of iPSC-SNs with patch-clamp electrophysiology, confirming neurons produce action potentials, and prominent Na<sup>+</sup> and K<sup>+</sup> currents.<sup>7</sup>

**Results:** Single immature neurons plated on day 7, formed dense neurite networks and showed distinctive cell-body clusters as observed in previously published differentiation protocols.<sup>7-9</sup> Based on the Neurotrack automated segmentation analysis, a cell-seeding density of 6000 cells per well (384-well plate) was considered most optimal to obtain appropriate cell morphology.

The presence of early differentiation (*ISL1*, *RUNX1*), sensory neuron (*VGLUT1*, *VGLUT2*, *VGLUT3*) and nociceptor-specific (*TRPV1*, *TAC1*, *SCN9A*, *TRKA*) markers and their expression patterns across maturation timepoints was demonstrated using gene expression

analysis. The expression of neuronal markers TUJ1 and VGLUT1 were further verified using immunofluorescence staining.

iPSC-SNs showed a calcium response upon stimulation of TRPV1, a key nociceptor ion channel, using capsaicin as an agonist, thus demonstrating functional activity. Similarly, KCl elicited a strong calcium signal due to large non-desensitizing depolarisation of the neurons. Using patch-clamp electrophysiology in current clamp mode, we observed that iPSC-SNs displayed a typical  $-60\text{mV}$  resting membrane potential, and showed clear excitability, followed by depolarisation block at saturating current injections. Some cells displayed a single-spiking pattern, regardless of the amount of current injected. Voltage-clamp recordings of the iPSC-SNs revealed prominent voltage gated  $\text{Na}^+$  and  $\text{K}^+$  currents, with peak  $\text{Na}^+$  currents reaching approximately  $10\text{nA}$ .

**Conclusion:** The iPSC-SNs displayed distinctive morphology, expressed sensory neuron and nociceptor neuron-specific markers, and were functionally characterised. Therefore, these iPSC-SNs can potentially be utilised to model key nociceptive mechanisms, neuro-immune and neuro-skeletal interactions observed in OA and RA-related pain. It will enable the discovery of novel drug targets, validate the effects of novel compounds against known analgesic targets and facilitate high-throughput drug screening in vitro.

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## GP-04

### Prevalence of dysautonomia in chronic musculoskeletal pain: a cross-sectional study

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**Background:** There is substantial evidence that the autonomic nervous system plays a crucial role in pain modulation and chronicity, but current assessments for chronic musculoskeletal pain (CMP) do not often involve subjective and objective tests to investigate dysautonomia. Addressing this knowledge gap may explain the varied responses to standard CMP treatments and inform more comprehensive and effective management approaches.

**Aim:** We therefore Aimed to investigate the prevalence of dysautonomia across the CMP population compared to healthy controls, quantify dysautonomia burden in inflammatory and non-inflammatory musculoskeletal conditions, and evaluate the association between pain severity, psychological factors, and severity of dysautonomia.

**Methods:** This cross-sectional observational study recruited adults with CMP from musculoskeletal outpatient clinics at Chapel Allerton Hospital, Leeds, between October 2024 and July 2025 along with healthy participants with similar age-sex distribution. Inclusion criteria were a clinician-confirmed musculoskeletal condition diagnosis, pain duration >12 weeks, and the ability to understand English and provide informed consent. Pregnant individuals and those with advanced heart disease were excluded. Participants completed three validated questionnaires: the Composite Autonomic Symptom Score-31, the Brief Pain Inventory, and the Hospital Anxiety and Depression Scale.

**Results:** Of 896 patients screened, 342 participated in the study, along with 57 healthy controls. Dysautonomia was significantly more prevalent in the CMP population (74%, n=253) compared to healthy controls (11%, n=6). Prevalence rates were similar across inflammatory (75%, n=128) and non-inflammatory (73%, n=125) conditions. Higher pain severity (OR 1.43, 95% CI 1.25–1.65, p<0.001), depression (OR 1.22, 95% CI 1.14–1.30, p<0.001), and anxiety (OR 1.23, 95% CI 1.16–1.31, p<0.001) were all associated with greater odds of dysautonomia, adjusting for age and sex.

**Conclusion:** Dysautonomia is highly prevalent among individuals with CMP irrespective of inflammatory status which underscores the

importance of recognising it as a potential contributor to symptom burden in CMP. Our findings suggest that dysautonomia screening should be considered as part of routine assessment in musculoskeletal clinics.

**Keywords:** Autonomic Dysfunction, Dysautonomia, Chronic Musculoskeletal Pain, Fibromyalgia, Rheumatoid arthritis, Osteoarthritis

## GP-05

### Anxiety as a key modulator of endogenous pain inhibition in chronic neck pain: A precision management perspective

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**Background:** Chronic neck pain (CNP) is defined as persistent pain for at least three months at or around the cervical region.<sup>1</sup> Its pathogenesis involves a complex interplay of diverse contributory mechanisms, with its etiology further influenced by a combination of modifiable and nonmodifiable risk factors.<sup>1-4</sup> CNP is the most common adult musculoskeletal condition, affecting approximately 50% of the United States (US) population annually.<sup>3,4</sup> Individuals reporting more severe neck pain at initial onset demonstrate reduced recovery over time, with 62% of those with moderate to severe symptoms have persistent pain after 30 months.<sup>4,5</sup> In 2016, neck and low back pain incurred the highest healthcare expenditure in the US, estimated at \$134.5 billion.<sup>3,6</sup> Globally, it contributes to 3,551 disability-adjusted life years per 100,000 population.<sup>2</sup> Although extensive evidence has identified numerous risk factors for CNP, its incidence and prevalence rates remain on an upward trajectory.

**Aim:** We examined the association between health-related factors and pain processing mechanisms using Quantitative Sensory Tests in individuals with CNP.

**Methods:** A cross-sectional cohort study was conducted using a convenience sample of 41 nonconsecutive adults 18-65 years old diagnosed with chronic neck pain (CNP) who presented for initial physical therapy evaluation at a hospital-based outpatient rehabilitation center. Inclusion criteria: chronic neck pain ( $\geq 3$  months) without identifiable and progressive structural, neurological, or systemic pathology. Exclusion criteria were myelopathy, prior cervical surgery, inflammatory or autoimmune disease, fracture, malignancy, or progressive neuromuscular conditions. Demographic and health-related information collected were pain and disability scores using the Numeric Pain Rating Scale (NPRS) and the Neck Disability Index (NDI), respectively. Psychosocial variables involving anxiety and pain catastrophizing behaviors were assessed using the State-Trait Anxiety Inventory (STAI) Y-1 and the Pain Catastrophizing Scale (PCS), respectively. Quantitative Sensory Testing (QST) was used to evaluate individual pain processing mechanisms, consisting of mechanical pressure pain threshold (PPT) to assess pain tolerance and Conditioned Pain Modulation (CPM) to evaluate endogenous pain inhibition.

**Results:** Generalized additive model (GAM) was conducted to assess the nonlinear effects of NDI, STAI, and age on CPM. The model accounted for a modest proportion of variance in CPM (adjusted  $R^2 = 0.155$ ; deviance explained = 26.5%), indicating a limited overall fit. Among the predictors, a significant effect was observed for anxiety

level (edf = 1.00,  $F = 4.93$ ,  $p = 0.036$ ), suggesting a linear relationship in which increased anxiety was associated with altered pain modulation. NDI showed a nonlinear trend (edf = 1.50,  $p = 0.114$ ), and age was not significantly associated with CPM (edf = 1.00,  $p = 0.366$ ). Findings also showed significant nonlinear association between anxiety and PPT (edf = 3.56,  $F = 3.25$ ,  $p = 0.030$ ), suggesting possible threshold effects. For CPM, the model explained 26.5% of deviance (adjusted  $R^2 = 0.155$ ), with anxiety showing a significant linear association (edf = 1.00,  $F = 4.93$ ,  $p = 0.036$ ), suggesting its role in altered pain modulation.

**Conclusion:** Anxiety emerged as a decisive psychological determinant of pain modulation in CNP, exerting its influence through disrupted pain-inhibitory mechanisms. Targeting anxiety may meaningfully enhance endogenous pain modulation and guide preventive, timely therapeutic strategies central to precision patient management. Early integration of anxiety assessment and treatment into clinical pain management can directly inform decisions regarding targeted preventive approaches, advanced imaging, procedural interventions, and referral pathways to specialty care. Future studies should also examine how neck disability interacts with anxiety in shaping individual pain-modulation capacity. Collectively, these findings underscore the urgent need for precision-oriented preventive and early-intervention strategies which carries broad implications for public health and patient outcomes.

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## GP-06

### Adaptive worry in chronic pain: Context-dependent coupling and error-driven updating of pain interference worry

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**Background:** Chronic pain disrupts daily activities both directly and through anticipatory avoidance e.g. via worry about future consequences of activity engagement. From a Bayesian brain perspective, individuals should update pain interference predictions based on how accurate these predictions are. Yet worry about pain interference often persists in people with chronic pain even when actual interference is lower than they anticipated.

**Aim:** We examined (1) how accurately morning worry about pain interference predicted evening-reported actual interference, and (2) whether participants adjusted their pain interference worry based on previous-day prediction errors, consistent with Bayesian learning.

**Methods:** Eighteen adults with chronic pain completed ecological momentary assessments four times daily for 28 days (N=501 observations), rating morning worry about interference and evening interference experienced alongside pain, mood, activities, and other variables. We used lagged-level mixed-effects models and Monte Carlo simulations to test error-driven learning.

**Results:** Morning worry moderately predicted evening interference ( $b=0.39$ ,  $p<.001$ ; model  $R^2=0.27$ ). Evidence for error-driven learning was marginal: yesterday's prediction errors showed a small negative association with next-day worry adjustments ( $b=-0.08$ ,  $p=.064$ ). Monte Carlo simulations substantiated that this could represent a genuine small learning effect that our sample did not have sufficient power (27–31%) to detect reliably. However, this model shows that worry persistence ( $b=0.28$ ,  $p<.001$ ), current stress ( $b=0.19$ ,  $p=.008$ ), and mood effects were each approximately twice as large as the learning coefficient, suggesting that any adaptive error-driven updating of worry levels, even if present, is easily overwhelmed by the effect of recent affective states.

**Conclusion:** Worry moderately predicts interference but shows limited error-driven correction. Weak learning effects are overwhelmed by worry persistence and by current affect, suggesting an empirical explanation as to why pain interference worry would persist despite disconfirmation. Interventions may need to directly challenge worry-based predictions about pain interference as an upstream independent predictor of interference, for example with strict pacing strategies that can overcome the potential effect of worry on avoidance behaviours.

## GP-07

### Exploring Dyadic connectedness in pain: An experimental study

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**Background and Aims:** Pain is shaped not only by biological factors but also by the social environment, including interpersonal interactions. One proposed interpersonal mechanism is biobehavioural synchrony – the alignment of physiological and emotional responses between individuals during a social event. Synchrony has been associated with enhanced relationship satisfaction and emotional well-being, but its role in pain perception remains unclear. This study examines whether alignment within non-romantic dyads, specifically friends, relates to pain sensitivity. This poster reports on the development of novel Methods to assess dyadic closeness and physiological alignment during shared pain-related experiences.

**Methods:** Following institutional ethical approach 34 non-romantic adult dyads, without pain, were recruited. Dyadic physiological

synchrony was measured using continuous heart rate data collected during a shared task in which pairs engaged in a structured conversation about pain. Participants retrospectively rated shared positive and negative emotions experienced during the interaction. Closeness was operationalised as perceived mutual emotional support. Pain sensitivity was assessed using heat and pressure pain paradigms, including pain thresholds, temporal summation, and conditioned pain modulation (CPM).

**Results:** Data were analysed using Python-based correlation and regression. A significant positive correlation was found between connectedness and CPM ( $r = .409$ ,  $p = .020$ ), indicating that higher perceived connectedness was associated with stronger pain inhibition. Shared positive emotional synchrony and CPM were also positively associated – dyads who spent more time in shared positive emotional states demonstrated greater pain inhibition ( $r = .446$ ,  $p = .017$ ). No other significant associations were observed.

**Conclusions:** This study demonstrates the feasibility of a novel methodological approach to quantifying dyadic connectedness and physiological alignment in relation to pain. Findings suggest that perceived interpersonal connectedness may play a role in pain modulation, potentially informing future models of social influences on pain. An expanded study with a larger sample is currently underway to examine these relationships further and to explore the contribution of physiological and emotional synchrony to pain sensitivity.

## GP-08

### Increased central sensitivity in patients with chronic hand pain

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**Background:** Chronic hand pain (CHP) is frequently accompanied by diminished tactile acuity (1), altered hand representation (2,3), and modified somatosensory processing (4–6), likely reflecting an altered excitatory–inhibitory balance within the primary somatosensory cortex (S1). However, the specific effects of CHP on vibrotactile processing remain inadequately explored. Pain severity often differs substantially across individuals despite similar levels of peripheral injury, suggesting variability in central sensory processing.

**Aim:** This study Aims to investigate whether central sensitivity in vibrotactile processing is altered in CHP by measuring behavioural thresholds and the corresponding steady-state EEG responses.

**Methods:** 25 individuals with chronic hand pain and 25 age and sex-matched control participants were enrolled in the study. In Experiment 1, vibration detection /discrimination thresholds were determined using a two-interval forced-choice (2IFC) paradigm under two stimulation conditions. In the ‘full-26Hz’ condition, all ten fingers were stimulated; in ‘mask-26Hz’ condition, a target stimulus was delivered to five fingers while a baseline stimulus was applied to the remaining five fingers. In Experiment 2, steady-state somatosensory evoked potentials (SSSEPs) were recorded from the fingers under three different conditions. In the ‘alternating-26Hz’ condition, five fingers were vibrated at 26 Hz; in the ‘full-26Hz’ condition, all ten fingers were vibrated at 26 Hz; and in the ‘interleaved 26/23Hz’ condition, 26Hz vibrated five fingers and a mask stimulus at 23Hz vibrated the remaining five fingers.

**Results:** Patients with CHP exhibited lower vibrotactile thresholds than controls ( $p = 0.05$ ), indicating heightened sensitivity to innocuous vibration input at the behavioural level. SSSEP

recordings revealed significantly higher SNR in the CHP group relative to controls ( $p < 0.01$ ), suggesting increased cortical responsiveness to vibrotactile input. Computational modelling showed consistently smaller C50 parameters in the CHP group across conditions, supporting increased neuronal sensitivities.

**Conclusion:** These findings suggest that CHP is associated with widespread mechanical sensitisation, and the increased sensitivity may contribute to lower vibration threshold and enhanced neural responses, and potentially linked to their increased pain experience.

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## GP-09

### Embedding systematic pain assessment in oncology outpatient care: Acceptability of EPAT+ from the perspective of NHS clinicians

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**Background:** Cancer pain affects over 70% of patients, a third remain under-treated, leading to reduced quality of life, increased healthcare use, and psychological distress. Despite numerous guidelines, UK oncology outpatient services lack standardised pain assessment and management processes, resulting in

inconsistent care. The Edinburgh Pain Assessment and Management Tool (EPAT) has demonstrated effectiveness in inpatient settings, but its adaptation for outpatient care (EPAT+) requires evaluation of its acceptability before wider implementation. Acceptability—defined as the extent to which an intervention is perceived as appropriate, feasible, and satisfactory—is critical for successful integration into routine practice. Understanding these factors is essential to inform future scale-up and sustainability within NHS outpatient services.

**Aim:** This process evaluation Aimed to:

1. Explore the acceptability of EPAT+ from the perspective of oncology HCPs delivering the intervention.
2. Identify barriers and facilitators to implementation within routine outpatient practice.
3. Inform refinements to optimise integration of systematic pain assessment into NHS oncology outpatient pathways.

**Methods:** The CAPTURE study was a multi-centre, cluster-randomised pilot trial conducted across 10 oncology outpatient services at two NHS tertiary referral centres in Northern England. Services were randomised (1:1) to deliver EPAT+ alongside usual care or usual care alone. EPAT+ comprised four core components: pain screening, detailed assessment, treatment planning, and reassessment, supported by training and implementation champions.

Across both trial arms, thirteen people with cancer, three oncologists, four research nurses and four interventions champions participated in semi-structured interviews. Interviews explored acceptability of delivering EPAT+, as well as contextual factors influencing uptake. Researcher fieldnotes documented observations on workflow integration and trial procedures. Thematic analysis, informed by the Framework of Acceptability was used to identify and synthesise key themes. Findings informed recommendations for optimising intervention design, training, and implementation strategies ahead of a definitive trial.

**Results:** A preliminary analysis identified four interrelated themes that shaped the delivery and perceived value of EPAT+ across NHS oncology outpatient clinics:

**1. Intervention Delivery and Acceptability:** Implementation was achieved across all clinics although there was variation in who initiated and completed EPAT. Staff engagement ranged from proactive integration to perceptions that EPAT fell outside job boundaries.

**2. Role of Intervention Champions:** Research nurses facilitated uptake through practical preparation and ongoing logistics, though navigating team boundaries required repeated engagement. Peer support among nurses helped build confidence and shared learning for research-related approaches.

**3. Perceptions of Intervention Components:** Self-management booklets were often viewed as low-utility, though some consultants used them selectively. Suggestions included adding practical strategies for movement and pain control.

**4. Affective Attitudes and Perceived Benefit:** Patients valued explicit pain assessment, while clinicians questioned added value versus duplication of usual practice, though structured prompts were seen as helpful for distinguishing pain types.

Final data analyses will be completed by February 2026 and data integrated within data summaries above.

**Conclusion:** EPAT+ showed promise for improving patient experience by ensuring pain was systematically assessed and addressed

during oncology outpatient visits, fostering a sense of being heard and supported. However, variability in delivery and perceptions of added burden highlighted the need for refinements that aligned with both clinician workflows and patient priorities. Co-designed self-management resources that included practical, actionable strategies could enhance relevance and engagement.

Embedding EPAT+ within electronic health records (EHRs) and leveraging digital prompts, automated data capture, and remote monitoring could reduce administrative load and improve continuity of care. These innovations, combined with patient-centred enhancements, would help ensure that systematic pain assessment became a routine, acceptable component of NHS oncology outpatient services. Future steps included co-designing digital solutions with clinicians and patients, piloting interoperability within NHS systems, and evaluating cost-effectiveness and patient-reported outcomes in a definitive trial to inform scalable implementation.

## GP-10

### Ecological momentary assessment of endometriosis pain and psychological experiences over the month

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**Background:** Endometriosis affects approximately 10% of women worldwide [9]. Pain is a hallmark symptom of endometriosis, affecting up to 90% of individuals with the condition [1]. Pain is not only the most common symptom, but also the most impactful [2]. There is a growing recognition of the importance of psychological factors in endometriosis pain experiences, however this work is cross-sectional [5–7]. Since endometriosis is hormone dependent [8], pain can fluctuate with monthly hormonal fluctuations. Yet, how fluctuations in pain may relate to fluctuations in psychological experiences currently remains unknown.

**Aim:** To assess the temporal relationships between pain outcomes (severity and interference), and key psychological factors (fear of progression, interpretation bias, bodily threat monitoring, invalidation and imagery) in people with endometriosis pain, over the course of one month.

**Method:** In this online study, participants with painful endometriosis completed a baseline survey followed by daily ecological momentary assessment of endometriosis-related pain severity and interference, and other key psychological constructs for 30 days.

**Results:** Multilevel models with participant-level random intercepts examined daily predictors of pain interference and pain severity ( $N = 174; 2,255$  observations). Greater invalidation, bodily hypervigilance, bodily threat appraisal, and pain-related imagery were each independently associated with higher pain interference (all  $ps < .01$ ), even after accounting for pain severity, which showed a strong association with interference ( $B = .71$ ,  $SE = .02$ ,  $p < .001$ ). The same cognitive-affective factors were also associated with higher pain severity (all  $ps \leq .05$ ), whereas fear of progression demonstrated a small association with pain severity only. Models explained substantial variance in pain interference (marginal  $R^2 = .62$ ; conditional  $R^2 = .72$ ) and moderate variance in pain severity (marginal  $R^2 = .29$ ; conditional  $R^2 = .66$ ). Findings highlight the clinical importance of psychological processes in shaping daily pain experience and functional impact.

**Conclusion:** This study is the first to demonstrate that key psychological constructs fluctuate alongside endometriosis-related pain.

Greater bodily hypervigilance, threat interpretations, and pain-related mental imagery were associated with higher same-day pain severity and interference. Experiences of invalidation were also linked to worse pain outcomes, underscoring the importance of addressing invalidation as a systemic factor within endometriosis pain assessment and management.

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## GP-11

### Can surgery be the answer for intractable cancer pain?

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**Background:** Intractable cancer pain affects approximately 10% of palliative patients. When the WHO analgesic ladder and holistic interventions fail, neuroablative procedures may provide a solution. We present a case of open thoracic cordotomy, demonstrating its success in providing relief for cancer pain. This is an underused service with referrals often being too late for optimal outcomes [1]. Many palliative care services do not have access to streamlined pathways for referral.

**Method:** A middle-aged female with locally invasive fungating vulvar cancer presented with severe neuropathic and localised pressure pain. She exhausted standard analgesia, neuropathic adjuncts, and holistic therapies, suffering opioid toxicity without relief. This led to communication with the spinal surgery team, initially for an intrathecal pump but this was logistically challenging in the community and so she had a bilateral open internal thoracic cordotomy instead.

**Results:** The procedure successfully achieved profound pain relief and she was successfully weaned off pain medication and remained pain-free for the remainder of her life.

**Discussion:** Interventional spinal surgery such as open and percutaneous cordotomy provides an exciting prospect in the treatment of intractable cancer pain. This mirrors national UK data on percutaneous cervical cordotomy (159 patients) showing 50% opioid reduction [2]. Another study [1] demonstrated that 9 out of 10 patients with open thoracic cordotomy for lower quadrant cancer pain had a reduction in median opioid usage from 560mg to 160mg. This corroborates with a recent narrative review [3] suggesting that cordotomy provides immediate and substantial analgesia in over 90% of patients.

**Conclusion:** Palliative care would benefit from the integration of interventional spinal services to facilitate timely referral and management. Whilst we await further clinical trials [4] to establish robust guidelines, we should not ignore current surgical solutions in the management of intractable pain.

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## GP-12

### Online pain education for people with chronic pain: A systematic review and meta-analysis

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**Background:** Chronic pain is a prevalent and complex condition conceptualised as a multidimensional experience shaped by biological, psychological, and social processes. Within this biopsychosocial (BPS) framework, evidence-based treatments such as psychological therapies, graded activity programmes, and interdisciplinary rehabilitation are recommended as core components of care. However, uptake of these interventions is often limited by inadequate understanding of their purpose and value, as well as persistent biomedical beliefs about pain, contributing to underuse of effective treatments. Access to accurate pain information can play an important initial role in addressing these barriers. In recent years, there has been substantial growth in the delivery of pain education via online platforms. Although numerous systematic reviews have examined online interventions for chronic pain, these have typically been either broad in scope or focused on specific treatment modalities, most commonly online cognitive behavioural therapy. To date, there has been no comprehensive synthesis of online pain education as a distinct intervention. Evaluating its effectiveness and key characteristics is essential to inform clinical practice and guide future research.

**Aim:** This systematic review and meta-analysis Aimed to examine and synthesize the existing literature on online education interventions for

individuals experiencing chronic pain. The objectives were to evaluate the evidence for effectiveness in improving pain-related outcomes and to outline the key components and delivery parameters of online education programmes.

**Methods:** Electronic searches of PubMed, CINAHL, PsycINFO, and EMBASE were conducted from database inception to the search date (week 1, March 2025), supplemented by reference list screening and citation tracking. Eligible studies included adults with chronic pain (>3 months) receiving BPS pain education delivered online. Two reviewers independently screened studies and extracted data. 17 papers reporting 14 interventions were included from 2,300 records identified. Random effects meta-analyses were conducted for pre-specified outcomes reported in at least three studies, at post-intervention and three-month follow-up. Intervention characteristics were extracted using the TIDieR checklist. Risk of bias was assessed using RoB2, and certainty of evidence was evaluated using GRADE. The review was registered with PROSPERO and included patient and public involvement.

**Results:** Seventeen studies involving 3,635 participants were included. Participants were predominantly female (mean 69.8%), with a mean age of 49.4 years (SD = 13), and musculoskeletal pain was the most commonly reported condition. Interventions were categorised by delivery mode as asynchronous (self-paced, pre-loaded content) or synchronous (real-time interaction with clinicians). Asynchronous interventions were most common (14/17 studies) and were evaluated using more rigorous designs, including eight randomised controlled trials. Meta-analyses demonstrated small but statistically significant improvements in pain intensity (8 studies, n=1,623; SMD -0.20, 95% CI -0.36 to -0.05, p = 0.01), and disability (6 studies, n=1,480; SMD -0.37, 95% CI -0.70 to -0.03, p = 0.04) immediately post-intervention; these effects were not sustained at three-month follow-up. Effects on depression, anxiety, and pain self-efficacy were small to medium and non-significant. Across all outcomes, certainty of evidence was rated as low or very low, and all but one study was judged to be at high risk of bias.

**Conclusion:** Asynchronous online pain education was associated with small to moderate improvements in pain intensity and disability immediately post-intervention, although effects were not sustained at three-month follow-up and psychosocial outcomes remained uncertain. The evidence base is characterised by substantial heterogeneity in intervention format, terminology, and methodological quality, with limited evaluation of synchronous education models. Despite these limitations, online pain education represents a potentially scalable and accessible approach to supporting people with chronic pain. Further research employing clearer intervention definitions, improved methodological rigour, and targeted evaluation of synchronous formats is needed to strengthen the evidence base and inform clinical implementation.

**Key words:** Chronic pain, education, online, internet, biopsychosocial

## GP-13

### Adult pain scores in the emergency department: a scoping review

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**Background:** Pain is a common complaint in patients presenting to an emergency department (ED). Data shows that timely delivery of pain relief in this setting remains a challenge. Sub-optimal pain recognition and assessment in EDs negatively impacts overall pain management. British, European and American emergency medicine guidelines advocate for early pain assessment and reassessment post-analgesia, but these recommendations lack ED-based evidence on best Methods. Therefore, a review of the existing literature is needed to identify the current Methods of pain assessment and their associated evidence.

**Aim:** To identify the current pain assessment tools being used in the emergency setting, and to summarise their evidence.

**Methods:** This scoping review was registered with the Open Science Framework (<https://doi.org/10.17605/OSF.IO/ENVPY>) and its study protocol was peer-reviewed and published prior to completion. We used the Joanna Briggs Institute (JBI) methodology and adhered to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) reporting guidelines. A search of PubMed, Embase, CINAHL, Web of Science, Scopus, and the Cochrane Library for publications from January 2004 to November 2024 was executed, with international papers considered provided they were in English. Publications for inclusion had to evaluate or compare tool(s) assessing acute pain (duration under three months) in adults (aged eighteen or over) within the ED setting. Abstracts and protocols were excluded. After duplicate removal, two reviewers independently applied the inclusion criteria to titles and abstracts and then full texts to identify relevant papers. Quality assessment, using validated tools specific to each study design, was carried out by two reviewers to exclude any papers with unacceptably high bias risk. Any discrepancies were resolved with the input of third and fourth reviewers as needed. Pain measurement tools and their evidence were extracted by two reviewers, then collated and described.

**Results:** After application of inclusion criteria, 40 papers remained. There were six that were excluded after quality assessment due to unclear and/or flawed study design. This left 34 publications, with wide geographical representation, for inclusion in the scoping review. These consisted of 14 non-interventional, 15 cross-sectional, two randomised controlled, two interventional non-randomised, and one qualitative study. Overall, the quality of publications was poor with many excluding entire patient groups (e.g. the cognitively impaired) from their study populations. In total, 18 pain assessment tools from 17 countries were identified. Most showed significant inter-tool correlation, with highest levels observed between objective tools. Emergency clinicians underestimated pain levels compared to patients' self-reported scores, a potential problem when analgesia prescription depended more upon clinician-derived than patient-reported pain scores. Patient-reported scores were poor predictors of triage priority, radiologically evident pathology, and disposition. High self-reported pain scores did not always signify desire for analgesia. None of the studies working towards improvement of ED-based pain assessment incorporated patient input or opinions.

**Conclusion:** Current methods of ED-based pain assessment vary widely, and this review did not demonstrate which identified tool was superior. Patient-reported scores appear to lack both clinical impact and clarity around their intended effect, with decisions around triage priority and analgesia prescribing more dependent on clinician-derived pain scores. Overall, the poor quality of available evidence reveals the paucity of good research that exists in this area. The absence of the patient voice within the studied publications could explain why efforts to improve pain assessment in EDs have had limited success. Future research should deliver a higher standard of study

design and reporting and consider the experiences and perspectives of patients who have presented to the emergency setting in pain. This review and these suggestions pave the way for progress towards accurate assessment, vital for better pain relief in the ED.

## GP-14

### Sensorimotor distortion in female chronic pelvic pain: A scoping review

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**Background:** Chronic pelvic pain (CPP) affects up to 20% of women worldwide and is associated with substantial disability and healthcare burden(1), yet underlying mechanisms remain poorly understood. Sensorimotor distortion (SMD), defined as disruption to sensory and/or motor processing, may alter bodily experience, affecting sensitivity, motor control, and body perception, including perceived size, position, and ownership. Interventions targeting sensorimotor and perceptual processes show benefit in other chronic pain conditions(2) and have begun to be applied in CPP(3, 4), despite a limited theoretical basis. A systematic synthesis of the evidence relating to SMD in women with CPP is currently lacking.

**Aim:** To map and synthesise the evidence relating to sensorimotor distortion in women with chronic pelvic pain, including how it is conceptualised, measured, and reported.

**Methods:** A scoping review was conducted in accordance with Joanna Briggs Institute guidance and reported using PRISMA-ScR. Seven databases were searched from inception to April 2025. Eligible studies included women (≥18 years) with chronic primary or secondary pelvic pain and reported any assessment of sensory, motor, neurophysiological, or body perception function. Quantitative, qualitative, and mixed-Methods studies were included. Data were synthesised narratively.

**Results:** A total of 175 studies (19,457 participants) across 11 pelvic pain conditions were included. No study explicitly defined or theorised SMD as a construct in CPP. They collectively investigated it as deviations in sensory and motor function relative to healthy controls, with the majority using quantitative sensory testing. Most studies investigated altered sensory or motor function as a potential mechanism underlying the development of pelvic pain, as a symptom reflecting its presence, as a descriptive marker of condition severity, or as a target for therapeutic intervention.

Pain-evoking sensory testing of the pelvic region was the most common approach (329 tests), with reduced thresholds indicating sensory gain in 83.7% of tests (144/172), particularly in vestibulodynia, bladder pain syndrome, dysmenorrhoea, endometriosis, and CPP. Non-painful pelvic sensory tests demonstrated mixed findings (63% showing increased sensitivity). Evidence from distal body sites was inconsistent, though over half of pain-evoking tests outside the pelvis showed hypersensitivity, and 60% of pain modulation tests suggested altered central processing of pain. Motor testing was

infrequent and inconsistent, with no clear pattern of impairment. Neuroimaging and neurophysiological studies reported altered brain structure, connectivity, and responses to pain anticipation, though findings were heterogeneous. Six qualitative studies described disrupted body awareness, disconnection from the pelvic region, altered proprioception and interoception, and reduced perceived control over pelvic floor function in women with dysmenorrhoea, endometriosis, vestibulodynia, and chronic pelvic pain. Across all domains, substantial methodological heterogeneity and incomplete reporting limited comparability.

**Conclusion:** There is emerging but inconsistent evidence of sensorimotor distortion in female CPP, most clearly reflected as heightened sensory sensitivity in the painful pelvic region. Evidence for distal sensory changes, motor dysfunction, and neural alterations is variable and underdeveloped. Importantly, SMD is not currently conceptualised or measured as a coherent construct in CPP, limiting mechanistic insight and clinical translation. For people with pelvic pain, an improved understanding of sensorimotor contributions to body perception distortion may support more precise phenotyping and inform targeted, mechanism-based interventions. Future research should establish a clear theoretical framework for SMD in CPP, standardise assessment Methods, and integrate sensory, motor, and perceptual domains with patient-reported experience.

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## GP-15

### Sensorimotor distortion in chronic pelvic pain: Cross-sectional survey and validation of the fremantle perineal awareness questionnaire

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**Background:** Chronic pelvic pain (CPP) affects up to one in four women and is associated with a significant physical, psychological, and functional burden(1). Sensorimotor distortion (SMD), defined as altered sensory and/or motor processing, has been proposed as a contributing mechanism in some chronic pain conditions (2). The assessment of SMD in CPP has largely focused on sensory testing

rather than the patient's perceptual experience. The Fremantle Perineal Awareness Questionnaire (FrePAQ) was developed to measure perceptual disturbance of the perineal region of those with CPP. Its psychometric properties and clinical relevance have not been fully established.

Interventions targeting sensorimotor and perceptual processes show benefits in other chronic pain conditions (3) and are being applied in CPP (4, 5). However, the evidence confirming the presence of SMD in women with CPP remains limited.

**Aim:** To undertake a formal validation of the FrePAQ, based on Classical Test Theory and in keeping with COSMIN guidelines, and to investigate whether women with CPP report perineal SMD, as measured by the FrePAQ.

**Methods:** A preregistered international online survey recruited cis-gender women aged ≥18 years with CPP (≥3 months or ≥6 months cyclical) and pain-free controls. Participants completed the FrePAQ, pain intensity ratings, the Pelvic Pain Psychological Screening Questionnaire (3PSQ), and the Pelvic Pain Impact Questionnaire (PPIQ). A formal clinimetric validation of the FrePAQ was performed following COSMIN guidance. Group comparisons and correlational analyses examined clinical associations across pelvic pain conditions.

**Results:** There were 711 participants (431 pelvic pain; 280 controls) from 34 countries. The final FrePAQ demonstrated a stable two-factor structure: questions regarding Distress and Disconnection from the perineum (6 items) and perceived changes in Size and Shape (2 items). Confirmatory factor analysis showed excellent fit (comparative fit index = 0.988; root mean square error of approximation = 0.048). Measurement invariance was confirmed across pelvic pain and control groups. Internal consistency was good (Cronbach's  $\alpha$  = 0.84 pelvic pain; 0.82 controls). Test-retest reliability was good for Distress and Disconnection (intraclass correlation coefficient = 0.86) and acceptable for Size and Shape (0.70).

Women with pelvic pain scored significantly higher than controls on both factors, with a large between-group difference for Distress and Disconnection (mean difference = 4.08, Cohen's  $d$  = 0.98,  $p < 0.001$ ) and a smaller but statistically significant difference for Size and Shape (median difference = 0; higher mean ranks in the pelvic pain group,  $p < 0.001$ ). Motor-related distortions, especially the perceived loss of pelvic floor muscle control, were the most highly endorsed items across groups. Distress and Disconnection scores differed modestly across pelvic pain conditions ( $\eta^2 = .047$ ), with the highest scores in vulvodynia/vestibulodynia and bladder pain syndrome. Size and Shape scores were low and did not differ significantly between conditions. Distress and Disconnection showed moderate correlations with psychological distress ( $r = 0.44$ ) and functional impact ( $r = 0.30$ ), and small to moderate correlations with pain intensity ( $r = 0.21-0.23$ ).

**Conclusion:** The FrePAQ is a valid and reliable two-factor measure of perineal region perceptual distortion in women with CPP. This study provides the first evidence of SMD in this population and identifies a pattern distinct from that reported in complex regional pain syndrome and low back pain. Notably, distortions related to perceived size and shape were uncommon, whereas disturbances centred on motor control, agency, distress, and disconnection from the perineum and pelvic floor were prominent and consistent across pelvic pain conditions. This pattern suggests that targeting motor control and agency, rather than size or shape distortion, may be more relevant in future interventions for CPP.

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## GP-16

### The paradox of recovery: Improved perceived quality of life despite high pain burden and suboptimal analgesia in surgical patients

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**Background:** Despite significant advances in analgesia protocols, inadequate pain management continues in a large proportion of patients worldwide. The unmet need for optimal analgesia in surgical patients remains one of the most pressing challenges in surgical care. Recent investigations highlight persistent gaps in analgesic adequacy and the need for personalised multimodal strategies. We therefore sought to compare the pain-related and quality of life outcomes in perioperative patients across three surgical departments in Ghana, who adopt similar clinical guidelines for management of perioperative pain.

**Aim:** To evaluate perioperative pain intensity, pain interference, analgesic adequacy, and health-related quality of life among adult surgical patients.

**Methods:** This study was a hospital-based prospective cohort study which was undertaken at the surgical department of three tertiary hospitals in Ghana: University of Ghana Medical Centre (UGMC – 48.2%), 37 Military hospital and (37-MH – 31.2%), Ho teaching hospital (HTH – 20.6%), from the period of February 2022 to July 2024.

Recruited patients who consented were provided with two Patient-Reported Outcome Measures (PROMs) to be completed a week before surgery and at least two weeks post-surgical intervention. The Brief Pain Inventory (BPI- long form) and the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) were administered to and completed by participants (n=170). These assessed changes in pain severity, interference with normal functioning, and quality of life pre- and post-surgery. Pre-post differences were examined with descriptive statistics, one-sample tests on difference scores, and paired t-tests for continuous outcomes.

**Results:** The reliability was excellent for the BPI and SF-36 subscales, preoperatively ( $\alpha > 0.91$ ) and postoperatively ( $\alpha > 0.90$ ) with corrected item-total correlations ranging from 0.69–0.95, indicating strong coherence among instrument items.

Pain severity and pain interference scores were consistently high with a negative score for analgesic adequacy across the three institutions. The Pain Medication Index (PMI) indicated that around 30% of patients had negative scores, meaning their analgesic strength was lower than their reported pain severity, a clear marker of undertreatment. It is therefore not surprising that average pain scores were high among majority of patients, with 72% reporting severe worst pain alongside substantial pain interference with 40–60% reporting complete interference. This was consistent with the high proportion who reported needing stronger medication (42%), one third who indicated they required more than what was prescribed, and the very low incidence of side effects (6%), suggesting clinicians may have been overly cautious.

The duration of relief provided by prescribed analgesics was limited, with 55% indicating that they experienced up to 4 hours of pain relief, and 4% feeling their medication “didn’t help at all.” In terms of use, 42% indicated that they needed stronger medication, and 33% believed they needed more than what had been prescribed. Together with the PMI findings, this suggested under-prescription of long-acting or multimodal analgesia, reliance on weak opioids or NSAIDs, and pain-management strategies not optimized for sustained relief.

In contrast, SF-36 data show clear postoperative improvements in global and social domains. General Health and Self-Evaluated Health Status improved significantly, and Social Functioning increased, as did the overall SF-36 score. This highlights a paradox that is common but rarely quantified where patients feel healthier overall after surgery, yet substantial pain and functional interference persist, and a sizeable proportion are undertreated from an analgesic standpoint.

**Conclusion:** Surgery and perioperative care improved patients’ global health perceptions and social engagement, but pain intensity, functional interference, and negative PMI values indicate postoperative pain management was often suboptimal. Optimizing analgesic regimens, particularly matching analgesic strength and duration to pain severity, could enhance functional recovery and translate perceived health gains into more robust physical and mental health benefits.

## GP-18

### Developing activity pacing resources for the management of chronic pain

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**Background:** Activity pacing is frequently advised by multidisciplinary healthcare professionals as a coping strategy for chronic pain

(e.g. chronic back pain, fibromyalgia, osteoarthritis). Activity pacing is a complex intervention due to its many components (e.g. breaking down activities, being consistent with activities), that Aim to modify varying behaviours (e.g. overactivity-underactivity cycling, avoidance, excessive persistence).

Research finds mixed effects of activity pacing. This may be due to the absence of a widely used, comprehensive activity pacing scale or intervention. I previously developed a 28-item activity pacing questionnaire (APQ) and an activity pacing framework. The APQ and activity pacing framework are underpinned by the operant approach (driven by quota-contingency: undertaking activities according to time/goal/amount).

Prior to their use in clinical practice and research, these activity pacing resources require further development in wider settings, including primary care, to enable patients' sooner access to this strategy.

### Aim:

- 1) Test the validity, reliability and responsiveness of the APQ, while also reducing the number of APQ items to lessen the scale burden
- 2) Adapt the activity pacing framework as an intervention for primary care and wider settings

**Methods:** The APQ study involved a paper-based questionnaire, completed by adult patients with chronic pain attending NHS services in Northwest England/the Midlands (e.g. GP practices, first contact practitioner services, physiotherapy departments, pain services). Questionnaires included the APQ, an existing pacing subscale and measures of symptoms; administered at baseline, two- and twelve-weeks. Analyses assessed structural validity, construct validity, test-retest reliability and responsiveness. The study protocol was pre-registered (osf.io/hbsku).

To adapt the activity pacing framework, we undertook a systematic review and three sequential stakeholder workshops. The systematic review identified any type of evaluation (e.g. randomised controlled trials, feasibility/pilot, qualitative) of operant approach activity pacing interventions (PROSPERO:CRD42023451469). Two independent reviewers undertook screening, extracted data, appraised risk of bias and evaluated research certainty (via GRADE).

The stakeholder workshops involved clinicians and patient and public involvement (PPI) representatives discussing the components of activity pacing interventions, and issues around implementing activity pacing in primary care.

**Results:** Factor analysis of the APQ (n=347) found a four-factor model, with each domain comprising three items, forming the APQ-12. The four domains are named Activity adjustment, Activity planning, Activity consistency and Activity progression. The domains showed satisfactory internal validity (Cronbach's  $\alpha=0.70-0.84$ ) and test-retest reliability (n=130, ICC:0.53-0.64). Construct validity showed a varied pattern of significant correlations between the four domains and other symptoms. Only Activity consistency showed significant responsiveness to change (n=121,  $Rho=0.27$ , 95% CI=0.1-0.43).

The systematic review identified nine studies that tested heterogeneous activity pacing interventions (lasting between 2-11 sessions). The most common intervention components were pre-planning and alternating activities and/or rests. The direction of effect found activity pacing was associated with improved function, but had mixed effects on pain and fatigue. Syntheses were limited by risk of bias and low certainty of the research.

Stakeholder workshops involved seven clinicians and seven PPI representatives. Although time restrictions may limit the intervention

delivery among some primary care practitioners; earlier and wider access to activity pacing was felt important. Adaptions to the activity pacing intervention included adding more information on flare-up management and developing user-friendly resources for healthcare professionals and patients.

**Conclusion:** The APQ-12 is a multi-domain scale that has satisfactory validity and reliability. The responsiveness of the APQ-12 may have been limited due to methodological issues. Despite this, the APQ-12 shows promise as a measure for clinical and research use.

The co-developed adaptions will develop an activity pacing intervention that is more user-friendly, including in primary care. Future work will test the activity pacing intervention and APQ to explore the effects of activity pacing on chronic pain.

### GP-19

#### A Pilot Programme to Identify Patients in Primary Care who are Suitable for Spinal Cord Stimulation

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**Background:** It is acknowledged among specialists in the United Kingdom that Spinal Cord Stimulation (SCS) is an underutilised treatment for chronic, severe neuropathic pain, despite being a recommended and cost-effective treatment by the National Institute for Health and Care Excellence (NICE) (1).

We hypothesised that patients could be found in primary care that would benefit from SCS using clinical audit methodology comparing patients with chronic severe neuropathic pain to relevant NICE guidelines. Adopting a similar methodology already proven in heart failure patients and identification of patients for complex device therapy (2).

**Aim:** We explored whether a missed cohort of patients in primary care with chronic severe neuropathic pain, could be identified and receive treatment optimisation through a primary care chronic pain (PCCP) service.

**Methods:** Between October 2023 and September 2024, four General Practitioner (GP) Practices in the North Bristol NHS Trust (NBT) catchment area participated in a clinical audit programme to identify patients suitable for SCS implantation. The following methodology was adopted: i) System interrogation - queries were developed to identify patients with history of chronic pain who may benefit from a review at their local GP Practice; ii) Clinical audit - a comprehensive audit of medical records was undertaken to assess suitability for consideration for SCS following SCS referral criteria; iii) Patient invitations - patients identified from clinical auditors were triaged by a Consultant from NBT and those selected were invited to attend their GP Practice for face-to-face consultation with a Consultant specialising in pain management; iv) Clinical reviews - reviews were held at the patients local GP Practice to discuss current pain management and current symptoms. A comprehensive discussion was held regarding the benefit of any changes to current treatments and consideration of referral into secondary care; and v) Follow-up - patients were followed-up to ensure all clinical recommendations were enacted and to determine number of patients undergoing SCS implantation or other interventions.

**Results:** A total of 2,535 patient medical records were audited from a GP Practice population of 44,075. Following triage, 49 patients were selected for review in primary care by a secondary care specialist.

Forty-two patients attended their GP Practice for review with a Consultant from NBT (86% attendance rate), with 3 patients requesting desktop review of their medical record, and 4 patients who declined review. Of 45 patients reviewed: 27 were referred to neuromodulation clinic (15 for SCS consideration and 12 for ReActiv8 consideration), 5 were referred to local pain management clinic, 4 had medicines optimisation only, and 9 were to continue current management. In total, 10 patients had medicines optimisation (7 amitriptyline, 2 pregabalin, 1 morphine reduction). Of those patients identified for SCS consideration, to date, 3 have had SCS implantation, 2 are waiting for SCS trial, 8 going through psychological evaluation, 1 unsuccessful SCS trial and 1 declined SCS. To date, 2 patients have had ReActiv8 implants. EuroQol Five Dimensions (EQ5D) Visual Analog Scale (VAS) scores prior to SCS implantation were 0.2 and improved post SCS implantation to 0.83.

**Conclusion:** A service linking specialists in chronic severe neuropathic pain from secondary care with colleagues in primary care can identify a cohort of patients who are suitable and eligible for SCS device implantation. This can increase SCS utilisation, raise awareness in primary care and improve patient prognosis.

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## GP-20

### Feasibility of a Randomised Controlled Trial Comparing Two Physiotherapy Interventions for Chronic Neck Pain

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**Background:** Chronic neck pain is a leading cause of disability, significantly affecting quality of life for many people. Current guidelines recommend that physiotherapists deliver a combination of education, exercise and manual therapy. However, evidence suggests that clinical improvements from these interventions may not be sustained at long-term follow-up.

Research has consistently shown that people with chronic neck pain exhibit altered postural alignment, overactivity of the neck/shoulder muscles and impaired respiratory function. These findings may indicate that people with neck pain over activate abdominal and neck muscles, increasing mechanical loads on the spine and exacerbating pain.

We have developed a new physiotherapy intervention for chronic musculoskeletal pain, known as Cognitive Muscular Therapy (CMT). This intervention targets tension in postural muscles and integrates electromyography biofeedback to visualise muscle activity. CMT also integrates behavioural techniques to challenge beliefs and reconceptualise mechanisms underlying musculoskeletal pain.

**Aims:** This study Aimed to assess the feasibility of a randomised controlled trial designed to compare a preliminary implementation of CMT for chronic neck pain with best practice Psychologically Informed Physiotherapy (PiP).

We Aimed to investigate the parameters required to run a full trial (recruitment, retention and adherence) and to gain insight into the

potential for CMT to deliver improvements in pain/disability, over and above PiP.

**Method:** Adult participants were recruited from GPs, physiotherapy departments and social media. Inclusion criteria were neck pain >3 months, at high-risk of poor long-term outcome and >4 on a numeric rating scale for pain. Eligible participants were randomised into two groups. The CMT group received seven face-to-face sessions of CMT and the PiP group received five face-to-face plus two self-directed PiP sessions. The PiP intervention incorporated psycho-education, exercise and relaxation. Outcome data was collected at baseline, 14 and 26 weeks and analysed descriptively.

**Results:** Forty-six participants were recruited, with 23 allocated to the CMT arm. The mean (SD) age and BMI were 55 (11.5) years and 25.4 (3.4) Kg/m<sup>2</sup> in the CMT group and 60 (10) years and 25.5 (3.0) Kg/m<sup>2</sup> in the PiP group. At 26 weeks, clinical outcomes were completed by 73% of CMT participants and 86% of PiP participants.

An Intention To Treat (ITT) analysis was completed for both groups. At baseline, the mean (SD) Neck Disability Index score was 17.6 (6.2) in the CMT group and 16.8 (10.5) in the PiP group. At 26-weeks, this score improved by 7.1 (5.4) in the CMT group and 4.2 (11.7) in the PiP group. Corresponding changes in the Numerical Rating Scale were 1.8 (2.0) and 1.2 (2.5) respectively, changes in the Pain Catastrophising Scale were 9.7 (2.3) and 3.3 (12.0) respectively and changes in the Tampa Scale of Kinesiophobia were 9.2 (4.6) and 4.7 (7.4) respectively. Finally, the STarT MSK score improved from high risk to medium risk, in both groups.

**Conclusion:** This study demonstrated that a randomised controlled trial comparing CMT to best practice PiP is feasible and acceptable to patients. Both interventions showed within-group improvements in pain, disability, and psychological outcomes at 26 weeks. However, CMT participants demonstrated greater improvements in all outcomes at 26 weeks, demonstrating a signal of effectiveness.

These data suggest that our preliminary implementation of CMT for chronic neck pain has the potential to deliver larger long-term clinical improvements in neck pain/disability than existing psychologically informed physiotherapy.

Prior to progressing to a randomised controlled trial, further adaptation of the CMT intervention is required for neck pain. For this development we plan to work closely with patients to optimise intervention materials and undertake mechanistic work to ensure that the mechanical aspects of the condition are fully targeted. Following further intervention development, we plan to move to a definitive trial.

## GP-22

### Citizens' Jury recommendations on changing the culture of management of persistent pain in the Northeast and North Cumbria

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**Background:** While persistent pain remains a national problem, its prevalence and impact is particularly high and problematic in

the Northeast and North Cumbria region. The region is notable for its high rates of strong analgesic prescribing and deep-rooted health inequalities, particularly in areas of socioeconomic deprivation. As part of a strategy to inform and facilitate service change in pain management, Health Innovation Northeast and North Cumbria commissioned a Citizens' Jury to gain insight into public perceptions and opinions. In contrast with snapshot opinion polls or short duration focus groups, the Citizens' Jury model is designed to promote *deliberative enquiry* on issues of public importance. A selected group of citizens is given balanced information and committed time to collectively engage with expert opinion to produce a set of recommendations to inform policy making.

**Aim:** To produce a set of citizen-generated recommendations on how persistent pain management in the region could become less reliant on medical interventions such as opioid prescription.

**Methods:** The Citizens' Jury was delivered in partnership with Olovus (olovus.co.uk) a consultancy company specialising in patient and public involvement. The process had 4 distinct phases. **1. Oversight group:** 15 experts and opinion leaders were brought together from clinical practice, research, expertise by experience, and service delivery. The group decided on the selection of jurors and key experts – witnesses – with the principle of ensuring balance. A key role was to develop the specific question, which emerged as: *how do we achieve a shift away from medical intervention to better support people who live with persistent pain?* **2. Jury selection:** from 200 applicants to advertisements about becoming a paid juror, 15 people were selected to form the jury. The jury comprised men and women from different socioeconomic Backgrounds, some but not all of whom were living with persistent pain. With one person dropping out, 14 people took part in the jury process. **3. Jury learning phase:** experts and opinion leaders, selected by the oversight group, presented online to the jury and answered questions on a series of topics reflecting different aspects related to the question. The presentations were supplemented with homework materials. **4. Deliberation phase:** over 2 days the jury met in-person. With a lead facilitator supported by the project team the jury discussed and debated the question and arising issues based on their learning from phase 3. They then produced a set of recommendations.

## Results

There were 6 recommendations.

1. A social marketing campaign to tailor key messages to specific segments of the population.
2. Mandatory training for health and social care professionals and undergraduate and post-qualification levels.
3. Provision of pain management support within multidisciplinary hubs ranging from fixed centres, mobile rural services and online support to fit local needs.
4. Recognise persistent pain as a specific long-term condition.
5. Maintain input from the jury into ongoing policy discussions.
6. Support the establishment of an independent pain institute.

**Conclusion:** The Citizens' Jury recommendations provide a strong resource for policy development, and service improvement and implementation. This applies to the local region directly and also has clear relevance and use nationally. The project demonstrates the feasibility and usefulness of the Citizens' Jury process as a model of public engagement.

## GP-23

### Maintaining physical activity after pain management programmes: a qualitative exploration of barriers, facilitators and activity patterns

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**Background:** Pain management programmes are multidisciplinary interventions that Aim to facilitate selfmanagement and rehabilitation of persistent pain. These programmes target people with persistent pain that experience high disability and distress. Physical activity is a fundamental rehabilitation and self-management strategy promoted on pain management programmes. However, many patients struggle to maintain a higher level of physical activity long-term post-programme, which is essential to achieve ongoing benefits.

**Aim:** This study Aimed to explore the barriers and facilitators to maintaining physical activity after pain management programmes for people with persistent musculoskeletal pain. It also Aimed to explore physical activity patterns following pain management programmes.

**Methods:** This study used qualitative methodology. Participants included people with persistent musculoskeletal pain that were six to 18 months post completion of a pain management programme, physical activity partners (people that supported patient participants with physical activity), and healthcare professionals working on pain management programmes. They were recruited from three NHS pain management programmes and required to give informed consent prior to participating. Purposive sampling was used to ensure representation of patient participants with varied success at maintaining physical activity and different professions for healthcare professionals. Healthcare professionals and people with persistent musculoskeletal pain without physical activity partners participated in individual semi-structured interviews. People with persistent musculoskeletal pain with participating activity partners took part in dyadic interviews. The interview guide consisted of open questions regarding experiences of and barriers and facilitators to maintaining physical activity and questions informed by the Theoretical Domains Framework to ensure comprehensive exploration of potential domains of barriers and facilitators. Interviews were conducted in-person, via videoconference or via telephone and were audio recorded and transcribed verbatim. The data were then analysed using reflexive thematic analysis to construct physical activity patterns and generate themes relating to barriers and facilitators. The themes regarding barriers and facilitators were then mapped on to the Theoretical Domains Framework.

**Results:** Thirty-two interviews were conducted. Twenty-four were with people with persistent musculoskeletal pain, of which seven included physical activity partners. Eight interviews were with healthcare professionals. Sixteen patient participants were female, seven were male and one was non-binary. Median age of patient participants was 54 years, median duration of pain was 11 years, 12 identified as consistency active and 12 identified as inconsistently

active or inactive. The healthcare professionals included four physiotherapists, two occupational therapists and two psychologists. Five themes were generated: “Internal drivers for physical activity maintenance” (e.g., beliefs), “Fitting physical activity into life” (e.g., habit formation), “Symptoms and symptom management” (e.g., pain management strategies), “Social networks and influences” (e.g., encouragement from others) and “Environmental influences” (e.g., accessibility of physical activity opportunities). The themes mapped onto 13 of the 14 Theoretical Domains Framework domains. Four activity patterns were constructed that describe different physical activity trajectories following pain management programmes: “Consistently active”, “Initially consistently active post-programme but then inconsistently active”, “Inconsistent since pain management programme” and “Same or reduction in activity level since programme”.

**Conclusion:** This study generated five themes relating to the barriers and facilitators to maintaining physical activity after pain management programmes for people with persistent musculoskeletal pain. The broad nature of these barriers and facilitators highlight the complexity of maintaining physical activity long-term for this population. These findings will support the development of an intervention Aimed at supporting physical activity maintenance following pain management programmes. Four physical activity patterns were constructed that show the different trajectories of activity levels patients can have after pain management programmes. These patterns will inform tailoring of the intervention. Enhancing physical activity maintenance is likely to lead to improved pain self-management which is essential for a condition with high personal burden and healthcare costs.

## GP-24

### Post stroke pain: modulation of central and peripheral mechanisms

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**Background:** Stroke is a leading cause of disability, with approximately 30% of ischaemic stroke survivors developing post-stroke pain (PSP) (1). PSP is a chronic neuropathic condition that impairs quality of life and recovery yet remains poorly treated due to limited understanding of its molecular mechanisms. Evidence from neuropathic pain and stroke models implicates calcitonin gene-related peptide (CGRP), mitogen-activated protein kinases (MAPKs), including ERK and p38, and sustained microglial and astrocytic activation in post-ischaemic neuroinflammation and chronic pain (2,3). Matrix metalloproteinase-9 (MMP9), a regulator of blood-brain barrier integrity and inflammatory signalling, has been associated with neuropathic pain (2); however, its role in PSP remains unclear. Carnosine, an endogenous dipeptide with neuroprotective properties linked to MMP9 inhibition, represents a potential therapeutic intervention.

**Aim:** This study Aimed to characterise peripheral and central mechanisms underlying PSP and evaluate pharmacological modulation of these pathways.

**Methods:** Male and female C57BL/6 mice underwent permanent focal cerebral ischaemia induced by distal middle cerebral artery occlusion (pMCAO). Carnosine was administered 2 hours post-pMCAO, while vehicle-treated mice received saline. Baseline nociceptive sensitivity was assessed prior to surgery using paw withdrawal thresholds in response to light mechanical stimulation. Postoperative assessments were conducted on days 7, 14, 21, and 28 using calibrated

von Frey filaments. Paw withdrawal thresholds were determined by counting responses to a 2 g stimulus, with a threshold of 10 stimulations to assess sensitivity. On day 28, mice were euthanised, and dorsal root ganglia (DRG), spinal cord, and thalamic tissue were collected. Immunofluorescence examined markers of nociception, inflammatory signalling, and glial activation, including CGRP, phosphorylated ERK (pERK), phosphorylated p38 (pP38) and GFAP. Imaging was performed using a Leica DMi8 microscope and quantified with FIJI.

**Results:** Vehicle-treated mice developed persistent mechanical hypersensitivity in the contralateral hind paw and pMCAO induced sustained activation of nociceptive and inflammatory signalling in contralateral sensory pathways 28 days post-injury. In DRG, expression of CGRP, pERK, and pP38 was elevated on the contralateral side relative to ipsilateral tissue. CGRP-positive cells were significantly increased in contralateral DRG compared with ipsilateral controls ( $p < 0.01$ ), indicating enhanced peripheral nociceptive signalling. pP38 expression was also elevated contralaterally ( $p < 0.01$ ), consistent with sustained inflammatory MAPK activation, while pERK showed a trend toward increased expression.

Similarly, pMCAO resulted in pronounced molecular changes within the spinal dorsal horn (DH). Contralateral DH tissue exhibited significantly increased GFAP expression compared with the ipsilateral side ( $p < 0.01$ ). CGRP immunofluorescence was significantly elevated in the contralateral DH ( $p < 0.01$ ), suggesting enhanced central nociceptive transmission. In addition, pERK expression was significantly increased in contralateral DH neurons ( $p < 0.05$ ), supporting activation of central sensitisation pathways following stroke.

In contrast, carnosine treatment attenuated behavioural hypersensitivity, and no significant differences were observed between ipsilateral and contralateral DRG or spinal cord in the expression of CGRP, pERK, pP38, or GFAP ( $p > 0.05$ ), demonstrating effective pharmacological modulation of peripheral and central nociceptive pathways.

**Conclusion:** Collectively, these findings provide insight into the peripheral and central mechanisms that drive PSP. By demonstrating the involvement of CGRP, MAPK signalling, glial activation, and MMP9-dependent inflammatory pathways, this work supports the concept that targeted pharmacological inhibition of these cascades may serve as a disease-modifying strategy to alleviate PSP, promote functional recovery, and improve outcomes for stroke survivors.

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## GP-25

### Healthcare professionals' experiences of supporting patients and families dealing with cancer-related pain: A qualitative study

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**Background:** Cancer survival rates are at an all-time high, resulting in more people living longer with and beyond cancer. However, this has led to an increase in individuals experiencing the long-term effects of cancer and its treatment, including cancer-related pain. Cancer-related pain continues to be the most commonly reported symptom, yet healthcare professionals often report low confidence and knowledge in its assessment and treatment.

**Aim:** This project Aims to explore the experience of healthcare professionals when supporting those impacted by cancer-related pain.

**Methods:** This qualitative study explored healthcare professionals' (HCPs) experiences of supporting those with cancer-related pain, employing an interpretive phenomenological approach. HCPs across the UK were recruited via social media platforms to participate in an online semi-structured interview. A topic guide was developed following a review of existing evidence and consultation with a stakeholder group, including professionals and individuals with lived experience. Reflexive thematic analysis was applied to identify themes, supported by NVivo.

**Results:** Eighteen participants were interviewed: five nurses, five physiotherapists, four physicians, and four therapeutic radiographers. The six-stage reflexive thematic analysis was used to conceptualise five themes: Navigating Complex Interactions with Patients and Families, Knowledge and Confidence in Cancer-Related Pain, Working with Other Professionals, Professionals Working within Organisations, and the Emotional Impact of Cancer-Related Pain. Healthcare professionals are exposed to highly complex and emotionally demanding clinical situations concerning cancer-related pain. Despite this complexity, there is a notable lack of support available to them in terms of both their professional development and mental wellbeing.

**Conclusion:** This study highlights the complexity of consultations faced by HCPs across all areas of cancer practice. It is essential that HCPs have the necessary knowledge, skills, and support to provide the appropriate care to those affected by cancer-related pain, including family members. Professional education, interprofessional collaboration, mental health support, and organisational culture are all areas that require further attention and research.

## GP-26

### Patient initiated follow-up in a tertiary pain service: Two-year audit of outcomes, capacity release and re-referral patterns

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**Background:** Patient Initiated Follow-Up (PIFU) pathways allow patients to access follow up when they feel they need it rather than attending routinely scheduled appointments. PIFU is endorsed within the NHS England outpatient transformation and elective recovery policy as a means to reduce unnecessary follow-ups, improve responsiveness, and support personalised care planning in long term conditions (1). National guidance emphasises shared decision making, clear eligibility criteria, safety-netting, and reliable routes for rapid access to services (2).

Peer reviewed evaluations suggest PIFU can safely reduce routine outpatient activity in appropriately selected patients, without adverse clinical outcomes and with high patient satisfaction (3). A recent

National Institute for Health and Care Research (NIHR)-funded mixed-Methods evaluation reported that PIFU implementation across NHS trusts releases capacity, but requires robust administration, and clear communication and monitoring to ensure equitable access (4).

Evidence specific to chronic pain services remains limited despite high follow-up demand, and long waiting list characteristics. Pain trajectories are often fluctuating, making time based routine follow-up poorly aligned with clinical need. Real world data from pain services are required to inform safe adoption, capacity planning, and economic evaluation of PIFU in this specialty.

**Aim:** To evaluate PIFU in a tertiary pain service over two years by:

- i) Describing PIFU utilisation;
- ii) Determining the proportion of patients requesting follow-up during the PIFU period;
- iii) Measuring re-referral rates after PIFU expiry;
- iv) Assessing documentation quality;
- v) Estimating capacity released through avoided routine follow-ups.

**Methods:** A retrospective audit of electronic records identified all patients placed on PIFU between 25/05/2022 and 23/02/2024 within the Chronic Pain Service. Data collected included PIFU duration, requests for follow-up within the PIFU window, re-referrals following PIFU expiry, and documentation of PIFU information in correspondence to patients and general practitioners. 296 patients were identified; 24 were excluded due to incomplete documentation, leaving 272 complete records for analysis. Descriptive statistics were used. Capacity released was calculated by converting minutes of routine follow-up time saved into clinician hours and equivalent new patient appointment capacity (45-minute new patient slots).

**Results:** Of the 296 patients placed on PIFU, 30 patients (10%) contacted the service requesting follow-up within the agreed PIFU period. Twenty-one patients (7%) were re-referred after their PIFU period expired. PIFU duration varied: 3 months (n=5), 6 months (n=31), 12 months (n=281), 24 months (n=3), 5 years (n=1).

Documentation quality was high: 90.8% had PIFU documented in clinic or GP correspondence, while 27 patients had no documentation.

Qualitative themes for re-referral included lack of awareness of being on PIFU, uncertainty about contacting the department, and misunderstanding of when to seek help.

Avoided routine reviews allowed for an additional clinical capacity of 133 hours, equivalent to 177 new patient appointments over a two-year period.

**Conclusion:** PIFU is a feasible follow-up approach within tertiary pain services, and was associated with low rates of unplanned contact, with an associated increase of clinic capacity. These gains can be redeployed to people with uncontrolled or severely disabling pain, potentially improving access and waiting times. Reported re-referrals often reflected misunderstanding of the pathway, indicating the need for clearer written patient information and consistent documentation. These findings support national policy promoting PIFU while highlighting practical implementation considerations specific to pain services. Further work will incorporate coding and tariff data to quantify financial benefit and assess patient reported outcomes.

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## GP-27

### Relationships Between Neurodivergent Conditions, Hypermobility and Fibromyalgia: A Systematic Literature Review and Narrative Synthesis

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**Background:** Autism Spectrum Condition (ASC), Attention Deficit Hyperactivity Disorder (ADHD), and Dyspraxia (Developmental Coordination Disorder; DCD), collectively referred to as neurodivergent conditions, frequently co-occur with fibromyalgia and joint hypermobility. Neurodivergent individuals also experience mental and physical health symptoms that overlap with those reported in individuals diagnosed exclusively with fibromyalgia or hypermobility, suggesting potential shared mechanisms. However, most existing research has examined these relationships in isolation, using pairwise comparisons. As a result, limited evidence exists regarding symptom profiles and comorbidity patterns in individuals presenting with multiple co-occurring conditions. Addressing this gap is important for improving clinical assessment and developing interventions that better reflect the complexity of these overlapping conditions.

**Aim:** This systematic review Aims to consolidate existing literature to clarify prevalence patterns and comorbidity rates across four relationships (1) neurodivergent conditions and fibromyalgia, (2) neurodivergent conditions and hypermobility, (3) hypermobility and fibromyalgia and (4) the combined presentation of neurodivergent conditions, hypermobility and fibromyalgia.

**Methods:** The review followed PRISMA guidelines and was pre-registered with PROSPERO (CRD42024519621). The final search was conducted on 9 September 2024 across six electronic databases. Studies were independently screened by three reviewers according to predefined inclusion and exclusion criteria, with discrepancies resolved through discussion. Quality assessment and risk of bias were evaluated using the Joanna Briggs Institute critical appraisal checklist for analytical cross-sectional studies and case reports. Due to substantial methodological heterogeneity, a narrative synthesis approach was used.

**Results:** Following screening, 48 studies were included. Of these, 46 used quantitative cross-sectional designs and two were case studies. Sample sizes ranged from 27 to 87,394 participants, with ages spanning from 2 to 90 years. Twenty-four percent of studies included only females, 41% included predominantly female samples, 13% predominantly male samples, and 22% had a relatively balanced sex distribution. Studies were conducted across multiple countries, most commonly the UK and Türkiye (n=10 each), followed by Italy and the USA (n=7 each), Sweden (n=5), and several other countries.

**Neurodivergence and Hypermobility:** Across studies, hypermobility prevalence was higher in neurodivergent populations (51%) than in

control groups (17.5%). Significant associations were reported between ASC and hypermobility, with individuals reporting higher rates of multisystem symptoms, including autonomic dysfunction and immune- and hormone-mediated symptoms. In samples with hypermobility or Ehlers-Danlos syndrome, ADHD prevalence ranged from 3% to 4.6%, exceeding control rates. Similar co-occurrence was observed in paediatric populations, with hypermobility reported in 27–46% of children with ASC or ADHD.

**Neurodivergence and Fibromyalgia:** ADHD prevalence in fibromyalgia samples ranged from 24% to 44.7%, compared with 5–7.4% in control groups. Individuals with both fibromyalgia and ADHD reported higher fibromyalgia symptom severity. Higher rates of depression, anxiety, alexithymia (56.4%), and substance use disorder were also reported in fibromyalgia populations.

**Hypermobility and Fibromyalgia:** Hypermobility prevalence in fibromyalgia samples ranged from 12.8% to 78.9%. In EDS clinic populations, 56.5% met criteria for both hEDS/HSD and fibromyalgia. Paediatric studies reported hypermobility prevalence between 14% and 48% among children and adolescents with fibromyalgia.

**Neurodivergence, Hypermobility, and Fibromyalgia:** One study examined the combined relationship, reporting weak to moderate correlations between autistic traits, fibromyalgia scores, and symptom severity. Hypermobility was found to partially mediate the relationship between autistic traits and fibromyalgia outcomes.

Common limitations included inadequate identification or management of confounding variables, unclear inclusion criteria, and variability in diagnostic Methods, including clinical diagnosis, self-identification, and differing assessment tools.

**Conclusion:** This review demonstrates consistent relationships between neurodivergent conditions, hypermobility, and fibromyalgia. Overlapping features such as pain, sensory sensitivity, autonomic dysfunction, cognitive differences, and vulnerability to mental health conditions were frequently reported across studies. Understanding these conditions as interconnected rather than independent may support improved screening, diagnosis, and treatment approaches.

## GP-28

### Intravenous lidocaine infusion for the treatment of fibromyalgia as measured with quantitative sensory testing

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Fibromyalgia (FM) is a disorder characterized by widespread musculoskeletal pain accompanied by fatigue, sleep, memory and mood issues and is associated with dysfunctional pain modulation mechanisms, including central sensitization. Experimental pain measurements, such as quantitative sensory testing may serve as a marker of central sensitisation.

Standard treatments for FM include education, physical exercise, psychology, and medications. Anti-depressants remain the treatment of choice, however high incidence of side effects and lack of efficacy have stimulated a demand for additional treatment modalities. Lidocaine is an alternative drug which can achieve both central and peripheral analgesic effects with relatively few side-effects.

In this study we investigated the effect of intravenous infusions of lidocaine using two dynamic quantitative sensory tests (QST) that

measures approximate key aspects in central pain processing and quality of life in patients with fibromyalgia.

Forty patients were included in the study, which consisted of baseline QST, intravenous lidocaine 2–4mg/kg and then follow up QST 21–42 days post treatment.

Patients with FM showed differences in dynamic QST including impaired conditioned pain modulation (CPM) prior to lidocaine, reverting to an efficient CPM response within 21–42 days following intravenous lidocaine and increased temporal summation (TS) at baseline returning to a normal response. Modest changes with pressure pain thresholds

This is the first reported observation highlighting the effects on central sensitisation following lidocaine infusion as measured by QST in a FM population.

A consistent and sustained improvement in dynamic QST measures was observed in contrast to PPTs where there was a modest change. Normalisation of the TS and CPM response following lidocaine infusion indicates that the treatment may reduce central sensitization in the FM population.

## GP-29

### Quantifying multifidus metabolic activation after restorative neurostimulation and exercise using <sup>18</sup>F-FDG PET/CT

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**Background:** Chronic mechanical low back pain (CLBP) is often associated with multifidus dysfunction and spinal instability, yet some patients fail to restore multifidus neuromuscular control and curb symptoms utilizing current conservative therapies. Restorative neurostimulation targets the L2 medial branch of the dorsal ramus to elicit episodic tetanic contractions of the multifidus, with clinical studies reporting sustained improvements in pain, function, and quality of life over multiple years. However, in human, noninvasive biomarker of therapy related multifidus remodeling and activation that links mechanism to clinical benefit has not yet been established in the research.

**Aim:** Using <sup>18</sup>F FDG PET/CT, the overall Aim is to quantify multifidus metabolic activity (standardized uptake values [SUV]) within active cross sectional areas (CSA), and active volumes (as a proportion of total multifidus) at baseline and after therapy. Specifically, measurements focused on changes in active multifidus CSAs and volumes after (a) a 30 minute restorative neurostimulation session at 6 and 12 months relative to resting baseline, and (b) a standardized exercise bout (one set of 20 prone arm raises per side) at pre implant baseline, 6 months, and 12 months post activation.

**Methods:** A prospective imaging study conducted under regulatory approvals (ClinicalTrials.gov: NCT04327817; London Fulham REC: 20/LO/0740) is ongoing. Adults with intractable mechanical CLBP undergoing restorative neurostimulation were identified and recruited. A methodological pilot cohort (N=8) completed PET/CT at baseline (rest), 6 months (post therapy), and 12 months (post therapy); an ongoing exercise cohort (N=7) is being assessed pre implant and at 6- and 12-months post activation. Co-registered PET (using <sup>18</sup>F FDG radiotracer) and CT scans allowed for active SUV CSA and volume and whole muscle volume segmentations; baseline MRI for lean muscle CSA (L1–L5) segmentation. Data were/are quantified as (i) active volume: PET defined SUV volume relative to whole CT segmented multifidus volume, and (ii) active CSA: PET defined SUV CSA relative to MRI defined lean multifidus CSA at L3, L4, and L5 mid disc levels. Descriptive statistics (medians, ranges) and change scores (absolute percentage point differences) are/will be reported.

**Results:** Pilot cohort (N=8; median age 45 years [range 23–54]; 5 female, 3 male) demonstrated active muscle volume between baseline (7%) and 6 months (18%) was able to be methodologically captured and quantified. Similarly, active CSA by level (L3, L4, and L5; baseline → 6 months) was captured as follows: L3 increased from 7% to 44% (+37 percentage points), L4 from 8% to 33% (+25), L5 from 2% to 7% (+5).

From 6 to 12 months, one patient withdrew for health reasons in the pilot study. In the remaining patient-participants, whole muscle active volume was measured at 14% (–4 from 6 months). L3 CSA was measured at 30% (–14 from 6 months), L4 at 23% (–10), while L5 increased to 11% (+4 from 6 months).

Exercise cohort (ongoing; N=7): All patient-participants have reached 6 months with preliminary volumetric processing nearly complete for this timepoint. Average combined multifidus active volume appears to have doubled, increasing from 6% (baseline) to 14% (6 months) (+8 percentage points). Level specific CSAs and SUV metrics are in processing for subsequent reporting.

**Conclusion:** In adults with mechanical CLBP undergoing restorative neurostimulation, <sup>18</sup>F FDG PET/CT demonstrated feasibility as a noninvasive method to quantify metabolically active multifidus, based on the methodological pilot study. Early findings show increases in average active combined multifidus muscle volume at 6 months in the exercise cohort (6% → 14%). These findings are achieving the Aim of quantifying restorative neurostimulation effects and providing objective, in human biomarker of multifidus engagement and recovery following restorative neurostimulation. Imaging evidence of increased metabolically active multifidus supports the proposed mechanism of improved segmental stability—an essential target for patients with intractable mechanical CLBP.

## GP-30

### Navigating systems change: Insights from rethinking pain, a VCSE-NHS partnership pain service in Bradford District and Craven

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**Background:** National policy increasingly promotes integration between NHS services and the Voluntary, Community and Social Enterprise (VCSE) sector to address complex, long-term conditions such as chronic pain. Integrated partnerships are seen as a route to more holistic, community-based care. However, despite this strategic emphasis, there is limited empirical understanding of how such collaborations function in practice, particularly within pain services. Bradford District and Craven's Rethinking Pain Service is a co-created VCSE–NHS community-led service designed to support people living with chronic pain through non-medicalised, person-centred approaches. This study explores the enabling conditions and embedded challenges of integration as experienced by those directly involved in service delivery and commissioning. Findings Aim to inform system leaders, commissioners, and practitioners seeking to develop authentic, equitable partnerships that reflect local needs and improve outcomes for people with chronic pain.

**Aim:** To examine the enabling factors and challenges of integrating NHS services with the VCSE sector within a co-created, community-led pain service, from the perspectives of stakeholders involved in delivery and commissioning the Rethinking Pain service in Bradford District and Craven.

**Methods:** An in-depth qualitative case study design was employed to examine integration within Rethinking Pain. Data were collected 18 months post-implementation through semi-structured interviews with 11 stakeholders, including commissioning leads, VCSE leaders, clinical leads, and frontline staff from both sectors. Participants were purposively sampled to capture diverse perspectives on partnership functioning. Interviews were audio-recorded, transcribed verbatim, and verified for accuracy. Thematic analysis was conducted using an iterative coding process to identify patterns of enabling factors and challenges. Analysis focused on relational, organisational, and systemic dynamics influencing integration practices.

**Results:** Analysis identified seven interconnected themes, each reflecting perceived enablers of VCSE–NHS integration for community pain support alongside challenges that could disrupt progress. These were: sustaining a clear vision amidst shifting political priorities; operationalising distributed leadership while managing power imbalances; promoting joint governance within hierarchical structures; pursuing innovative commissioning alongside budget protectionism; distributing roles in pain support where ownership conflicts arise; building partnerships while addressing trust issues; and enabling new ideas for pain support amid cultural resistance to change.

These themes operated not as fixed structures but as dynamic relational and organisational practices, requiring resilience and adaptability to navigate. While they demonstrate the benefits of integration, they also expose its fragility when not underpinned by robust organisational capacity, well-designed mechanisms, and strong leadership.

**Conclusion:** This study provides a practice-based account of VCSE–NHS collaboration within Bradford District and Craven’s Rethinking Pain service, offering insight into how integration is experienced in real-world settings, with a focus on enablers and challenges to change. The findings contribute to a grounded understanding of what integration looks like in everyday pain service contexts and offer practical insights for commissioners, system leaders, and practitioners seeking to develop authentic, equitable, place-based partnerships to support people living with chronic pain.

## GP-31

### Culturally informed pain support: Findings from rethinking pain’s faith-integrated pilot workshops

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**Background:** Chronic pain disproportionately affects people living in areas of high social deprivation, with additional barriers experienced by ethnically minoritised communities. In inner-city Bradford, many people from Muslim communities identify faith as central to meaning-making, coping, and health behaviour, yet this is not often acknowledged within pain education or self-management interventions. There is limited evidence exploring culturally informed, faith-integrated community pain education as a pathway to improved pain-related outcomes and engagement with services.

**Aim:** To develop, deliver, and evaluate a culturally informed series of community pain education workshops integrating Islamic faith-based concepts with contemporary pain science, and to explore whether

such an intervention represents a credible model of pain support for populations disproportionately impacted by chronic pain.

**Methods:** The Rethinking Pain service in Bradford District and Craven developed culturally informed workshops iteratively through community consultation, academic partnership, and cross-sector collaboration between the NHS and Voluntary and Community sector. Eight sequential 1.5-hour group workshops were piloted in accessible community venues between March and December 2024. Workshop attendees were adults living with long-term pain who identified faith as relevant to their coping. Sessions integrated pain education with Islamic concepts of self, suffering, gratitude, agency, and relationality, using taught materials, experiential activities, and facilitated discussion. Development of workshop content was led by a Muslim GP with specialist pain management experience. Delivery was supported by cross sector collaboration including health coaches, Islamic academic consultants, and community partners, with real-time translation in Urdu, Punjabi, and Pothwari.

Evaluation Aimed to capture lived experience through first-person enquiry. Data collection included two recorded focus groups (one male, one female) with consenting participants, facilitator reflections, and anonymised attendee feedback. Focus groups were transcribed verbatim with cultural and linguistic verification and analysed thematically to explore participant experience and perceived impact.

**Results:** Thematic analysis of focus group data revealed key themes: *learning through shared experiences, finding strength and power, emotional reflection and support, feeling privileged, personal growth, and gratitude and acceptance*. Anonymised feedback indicated enhanced peer connection and social support, reduced isolation, and increased normalisation of pain experiences. Facilitators observed improved health literacy, with participants demonstrating clearer understanding of pain as a long-term condition influenced by emotional, behavioural, social, and spiritual factors. Participants articulated pain experiences more effectively, particularly when using preferred languages. Psychological skills such as acceptance, emotional reflection, values-based action, gratitude, and cognitive reframing were evident, embedded within faith narratives rather than clinical terminology. Progressive improvements in group cohesion, participation, and confidence were also noted across the series of workshops.

**Conclusion:** The culturally informed, faith-integrated pilot workshops were found to be feasible, acceptable, and meaningful for Muslim communities living with chronic pain. Rather than functioning as a cure-based intervention, the workshops operated as a pathway that promotes agency, psychological flexibility, health literacy, and social connection, all of which are key mechanisms of pain support. These impactful outcomes highlight therapeutic benefits that could be scaled across diverse groups, warranting further study and development. In the long term, this approach has the potential to inform practical and culturally informed health support for people living with long-term conditions.

## GP-32

### Acceptability of a practice pharmacist-led primary care review for patients prescribed opioids for persistent pain: Findings from the PROMPT Randomised Controlled Trial (RCT) Process Evaluation

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**Background:** Best practice guidelines recommend that patients prescribed opioids for persistent non-cancer pain ("persistent pain") should be reviewed regularly, however, such reviews do not happen routinely in UK primary care. The PROMPPT research programme (funded by National Institute for Health and Care Research (RP-PG-0617-20005)) Aimed to develop and test a practice pharmacist-led primary care intervention for patients taking opioids for persistent pain. The intervention and pharmacist training were co-designed with stakeholders (patients and healthcare professionals), using a person-based approach combined with best practice guidance and theory, and refined following a feasibility study.

The PROMPPT trial Aimed to evaluate the clinical and cost-effectiveness of the PROMPPT intervention (PROMPPT review) compared to usual primary care for patients prescribed long-term opioids for persistent pain. In line with Medical Research Council (MRC) guidance on the evaluation of complex interventions, a mixed Methods process evaluation was conducted. As uptake of interventions by patients is often influenced by perceptions of acceptability a theory-informed approach, drawing on the Theoretical Framework of Acceptability (TFA) (1) of health care interventions (8 constructs; affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness, and self-efficacy) was used.

**Aim:** To explore patient acceptability of a practice pharmacist-led review of patients taking opioids for persistent pain.

**Methods:** Participants from intervention arm clusters who had provided written consent to being contacted about a future related research study and subsequently attended a PROMPPT review were invited to complete an acceptability questionnaire and/or take part in an interview as part of the process evaluation study.

The acceptability questionnaire comprised of 12 questions from two existing measures: a modified version of the treatment acceptability and credibility measure (2) and the TFA questionnaire (1). Semi-structured interviews were conducted using a topic guide informed by the TFA. Descriptive statistics were used to analyse the acceptability questionnaire responses and interview data were analysed using the Framework Approach, aligned to the TFA.

**Results:** Completed acceptability questionnaires were received from 139 participants, of which:

- Over 90% found the pain review 'Completely acceptable' or 'Acceptable' (*Global acceptability*)
- More than 70% 'Strongly liked' or 'Liked' the pain review (*Affective attitude*)
- Over 80% found that it required 'No effort at all' or 'A little effort' to participate (*Burden*)

In depth interviews with people who had attended a PROMPPT review supported these findings. Most reported that they found the review useful and would be happy to attend another one in the future. They reported being grateful for the opportunity to discuss their pain 'story' including how they manage their pain and what mattered to them. The majority liked the pharmacists' approach including the

'informal' and 'open conversations' which made them feel comfortable and built rapport and trust (*Affective attitude*).

Eleven out of the 18 interviews described making a change to their opioids following the pain review with some expressing this had been 'life-changing' and allowed them to re-engage in valued activities (*Perceived effectiveness*).

People also noted other benefits such as feeling better supported, being reassured about their current pain management, and greater awareness around their opioid use (*Perceived effectiveness*).

**Conclusion:** Overall findings indicated the PROMPPT review was acceptable to patients with most being grateful for the opportunity to discuss their 'pain story' and believed that by attending a PROMPPT review they were likely to change how they manage their pain.

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## P-01

### Comparing post-partum analgesia requirements in patients with opioid use disorder (OUD) on Buprenorphine vs Methadone as Medication-Assisted Treatment (MAT)

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**Background:** The prevalence of opioid use disorder (OUD) at delivery has risen substantially in recent years, contributing to increased maternal and neonatal morbidity, including neonatal abstinence syndrome, prolonged hospital stays, and increased mortality [1–3]. Medication-assisted treatment (MAT) with buprenorphine or methadone remains the standard of care for pregnant patients with OUD. However, effective postpartum pain management in this population remains challenging, with inadequate analgesia recognised as a risk [4]. Buprenorphine and methadone differ pharmacologically, with buprenorphine acting as a partial  $\mu$ -opioid receptor agonist and methadone as a full  $\mu$ -opioid receptor agonist. These differences raise questions regarding their relative impact on postpartum analgesic requirements. While previous research has focused largely on neonatal outcomes, the influence of maintenance therapy choice on postpartum pain and analgesic consumption has not been comprehensively synthesised.

**Aim:** To systematically review and synthesise available evidence comparing postpartum analgesic requirements and pain intensity in patients with OUD maintained on buprenorphine versus methadone.

**Methods:** A systematic review was conducted in accordance with PRISMA guidelines. OVID Medline and OVID Embase were searched from inception to July 2025 using combinations of keywords and subject headings related to buprenorphine, methadone, and delivery. Retrospective cohort studies were included if participants were adults with OUD maintained on buprenorphine or methadone at delivery and if postpartum analgesic requirements were reported for a minimum of 48 hours. Studies were required to report outcomes separately for each maintenance therapy. Extracted outcomes included opioid consumption (reported as morphine milligram

equivalents [MMEs] or equivalent measures), pain ratings, and length of hospital stay. Study quality and risk of bias were assessed using the Newcastle–Ottawa Quality Assessment Scale. Due to heterogeneity in reporting timeframes and analgesic metrics, a meta-analysis was not performed and Results were synthesised narratively.

**Results:** Seven retrospective cohort studies met inclusion criteria, comprising 1,550 patients, of whom 684 were maintained on buprenorphine and 866 on methadone. Studies included caesarean and vaginal deliveries, with variable anaesthetic techniques and analgesic protocols. Across studies, buprenorphine-maintained patients demonstrated greater variability in postpartum opioid consumption and, in several studies, higher reported MMEs compared with methadone-maintained patients. Pain intensity scores were comparable between groups, with most studies reporting no statistically significant difference in postpartum pain. Only one study demonstrated significantly lower pain scores and opioid requirements in patients maintained on buprenorphine. Overall, higher or more variable opioid consumption in buprenorphine-maintained patients did not consistently correspond to higher reported pain intensity.

**Conclusion:** In patients with OUD, postpartum pain represents a complex and high-risk clinical scenario where undertreatment can have harmful downstream effects. Available evidence suggests no consistent difference in postpartum pain intensity between patients with OUD maintained on buprenorphine versus methadone, despite greater variability among those receiving buprenorphine. These findings indicate that maintenance therapy should not be modified on the assumption of superior analgesic efficacy. Instead, postpartum pain management should emphasise multimodal and individualised strategies, addressing an unmet need in pain management for this vulnerable population. Further prospective studies with standardised outcome reporting are required to better inform postpartum pain management in this population.

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## P-03

### Test–retest reliability of conditioned pain modulation and temporal summation of pain using computer-controlled cuff pressure algometry

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**Background:** Conditioned pain modulation (CPM) and temporal summation of pain (TSP) are dynamic quantitative sensory testing

measures reflecting central pain processing mechanisms. Alterations in these processes are implicated in various chronic pain conditions. Although CPM is increasingly used in pain research, existing Methods employing thermal, electrical, mechanical, or chemical stimuli often demonstrate limited reproducibility and examiner dependency. Cuff pressure algometry (CPA) is a user-independent technique that may overcome these limitations; however, its test–retest reliability for assessing CPM and TSP remains insufficiently explored and holds limited evidence.

**Aim:** This study Aimed to investigate the test–retest reliability of CPM and TSP using computer-controlled cuff pressure algometry in a healthy population. It was hypothesised that CPM and TSP would demonstrate good to excellent reliability.

**Methods:** The test–retest reliability study was conducted in healthy adults recruited from the University of Birmingham. Based on previously reported CPM effects, a target sample size of 34 participants was estimated; however, 25 participants were enrolled, and 21 completed both testing sessions. Ethical approval was obtained from the Motor Control and Rehabilitation Ethics Committee, University of Birmingham (MCR2223\_26).

Participants completed two identical testing sessions separated by no more than 14 days, conducted by the same investigator. Prior to each session, participants completed the SF-36 and State–Trait Anxiety Inventory (STAI). Cuff pressure algometry was performed using a specialised system connected to 10-cm mechanical visual analogue scale (VAS). The test stimulus was applied to the dominant leg and the conditioned stimulus to the non-dominant leg. Pressure was increased at a rate of 1 kPa/s to a maximum of 100 kPa.

Outcome measures included pain detection threshold (PDT), pain tolerance threshold (PTT), and VAS scores. Temporal summation of pain was assessed using a series of repeated stimuli of identical intensity. Statistical analysis was performed using IBM SPSS Statistics (Version 29.0). Test–retest reliability was assessed using intraclass correlation coefficients (ICC) with a two-way mixed-effects model and absolute agreement. Bland–Altman analyses were conducted to assess agreement between sessions.

**Results:** Twenty-one participants (mean age  $\pm$  SD: 25.95  $\pm$  3.14 years) were included in the final analysis. Both PTT and TSP demonstrated excellent test–retest reliability. Single-measure ICCs ranged from 0.802 to 0.871, and average-measure ICCs ranged from 0.890 to 0.931. The gender-based comparisons across both sessions revealed that the differences were not statistically significant.

**Conclusion:** Cuff pressure algometry demonstrated good to excellent test–retest reliability for assessing CPM and TSP in healthy individuals. As a user-independent and reproducible method, CPA represents a dependable tool for evaluating central pain processing mechanisms, supporting its use in pain phenotyping and translational pain research. Future studies should include larger samples with balanced gender representation to further strengthen reliability and generalisability.

## P-06

### Implementation of a remote electronic consent process for interventional pain procedures

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**Background:** Informed consent is a legal cornerstone of good medical practice. The General Medical Council states “serious harm

can result if patients are not listened to, or if they are not given the information they need – and time and support to understand it.” Similarly, the Care Quality Commission highlights that valid consent must include details of risks, complications, and available alternatives.

Traditionally, in our service patients are offered the proposed interventional procedure during a consultation. Formal consent has always been obtained later, on paper, on the day of the procedure. This same-day process can be rushed, offering limited time for reflection.

To improve this, we implemented an electronic consent (e-consent) process. The proceduralist can generate a consent form electronically which is delivered digitally to the patient in advance of the procedure. The e-consent includes standard information and two additional features: alternative treatment options, and links to Faculty of Pain Medicine (FPM) patient information leaflets specific to the procedure.

Patients can review and sign consent remotely giving greater opportunity to reflect and make informed decisions. We consider this approach a more comprehensive and patient-centred process than traditional paper consent.

**Aim:** We Aimed to evaluate how the e-consent process was being used by both patients and clinicians. Specifically, we examined:

1. Proceduralist use of e-consent versus traditional paper consent.
2. Time intervals between procedure booking, e-consent generation and delivery, patient signing, and the procedure date.

**Methods:** We retrospectively reviewed consent records for 100 consecutive interventional pain procedures performed at our main intervention suite from September 2025. Consenting pain physicians were unaware that this review was taking place.

Data collected:

- Paper or e-consent – if e-consent then:
- Date of procedure booking
- Date of e-consent creation and delivery
- Date of patient signing
- Date of procedure

This enabled us to determine how long patients had to review their consent form and how far in advance consent was given relative to their procedure.

**Results:** Analysis of 100 consecutive procedures (from 15th September 2025) demonstrated:

- 100% compliance with the e-consent system, no paper consents used.
- 83% of e-consent forms were sent at least one day before the procedure.
- 54% were sent at least two days before.
- 17% were generated on the day of the procedure.
- 12% were created on the day the procedure was booked by the proceduralist.
- 32% of patients signed consent on the day of the procedure, even when the form was received earlier.

**Conclusion:** Full compliance with the e-consent record demonstrates successful implementation and clinician engagement, supporting a move towards paperless workflow.

Most patients receive their e-consent forms at least one day before admission, with over half receiving them two or more days in advance.

Many patients do not complete the consent in advance, likely reflecting demographic factors such as digital literacy or internet access. Some initially expressed concern that electronic messages might be scams. As familiarity with the system increases, we expect greater early engagement and smoother integration.

If the procedure booking date is used as a proxy for the consultation date, only 12% of consent forms were generated on the same day the intervention was discussed. Ideally, patients should receive this information immediately after consultation, allowing time for reflection or potentially withdrawing from the waiting list. This would enhance patient experience and service efficiency. However, our **current** practice may not have been accurately reflected here: the e-consent record is a recent introduction and many of these procedures were booked before its inception. Generating e-consent would have been impossible on the booking date.

We Aim to pull data for date of generation of e-consent compared to procedure booking in a prospective audit.

## P-07

### Times discrepancies in pain medication administration

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**Background:** Pain is common in medical and acute surgical hospital settings and often remains untreated. Many factors play a role in this; some are patient-related like patients having unrealistic expectations of what's possible in terms of pain management, and some are staff-related factors to do with analgesics prescription and administration. Poor prescription and administration of opioids may contribute to inadequate treatment of pain (Murnion et al 2010).

As a Clinical nurse specialist in pain management I often see that pain medication is delayed, given before or after the time it has been prescribed to be given. Patients often complain that pain medications are being given too late. Looking at our medication administration and controlled drug policy, it is unclear what constitutes an acceptable delay in drug administration. Policies only state administering the medication in a timely matter but without giving a specific timeframe.

**Aims:** The Aim of the research was to see how often pain medications are delayed and by how much time. Additionally, the Aim was to gauge what nurses think is an acceptable time for delay and what they think is the most common reason for the delay.

**Methods:** I audited patient data for one month for one trauma ward for patients seen by the pain team at Royal London hospital (RLH) and also for the whole hospital seen by the pain team at St Bartholomew's Hospital (SBH). I did this retrospectively and looked through the drug charts of the patients taking the time the nurses signed and comparing it with the time the pain medication was prescribed. I concentrated on weak, strong opioids and adjuncts and looked at 30, 60 and 120 minute time discrepancies. RLH doses once a week on a clinical Friday where teams can use this day to audit specific topics. I used one of the Fridays to audit what nurses think is an acceptable time to delay pain medication, how long a usual medication round takes and what the most common reasons for delaying administering opioids are.

**Result:** I audited 60 patients in total. 22 of them were at RLH and 38 at SBH. There were a total of 2330 drug administrations. 1030 of them in RLH and 1300 in SBH. In total 1498 administrations were

given after 30 minutes equal to 64%, 955 after 60 minutes equalling 41% and 277 administrations after 120 minutes equalling 12%. Comparing RLH with SBH RHL had a slightly higher percentage in all 3 categories. The Results from the clinical Friday nurses indicated a medication round takes on average 60 minutes and an acceptable delay for administration of pain medication ranges from 30 to 120 minutes. The most common reasons given for the delay of opioids administration were staff shortage, staff too busy to counter sign, acuity of the ward, and it being very time consuming to find a 2<sup>nd</sup> nurse for double checking. This correlates with the fact that strong opioids are more delayed than weak opioids as double signing is not needed.

**Conclusion:** More than half of the pain medication is given more than 30 minutes before or after the prescribed time and just under half are given 60 minutes before or after it. These discrepancies are concerning and indicate that patients most likely will not receive adequate pain management. 12% receive medication 120 minutes too early or too late. This could result in a patient experiencing more than 4 hours of inadequate pain management. There is next to no research done into the effect of delayed pain medication on pain management. With NHS staff shortages a big problem this can lead to inadequate pain management for many patients.

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#### P-08

#### Impact of chronic pain flare patients on acute pain services

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**Background:** Chronic pain patients experiencing flare-ups constitute a significant work stream for our acute pain services at Frimley health foundations trust. These attendances at our acute trusts put pressure on our emergency department colleagues, acute pain services and inpatient teams. This evaluation Aims to quantify this impact and explore potential solutions to improve patient care and NHS efficiency.

#### Aim:

1. To assess the frequency and patterns of attendance of chronic pain flare patients in the acute setting.
2. To evaluate the resources (clinician time, bed days) required to manage these patients with estimated costs
3. To identify the complexity of these patients, including categorising them based on medical and psychosocial factors, which may influence management time and outcomes.

**Methods:** Retrospective data collection for one month of acute pain service referrals across our acute sites (Wexham Park hospital and Frimley Park Hospital). The audit was registered with the trust quality improvement team as a service evaluation (FX-520). No ethics approval required.

We collected demographic and admission data utilising the faculty of pain medicines 'factors that influence the complexity in chronic pain' table<sup>4</sup>.

Inclusion: Acute on chronic pain flare

Exclusion: Post procedure flare, multiple admissions in same month (first admission used), medical issues at admission

**Results:** We identified over 350 patients seen by our acute pain colleagues in October 2025, of which note review identified 18 patients whose primary reason for admission is pain management of an acute on chronic pain flare.

#### Demographics

Age range 22 to 82, mean age = 49 years

BMI range = 19 to 36, mean BMI = 28

Average number of medical comorbidities 3.8

Average number of past surgeries 1

Number of patients taking more than four medications at time of admission = 13

4 out of 18 are smokers (or using vapes)

3 out of 18 have underlying psychiatric diagnoses

1 out of 18 have a sleep disorder

7 out of 18 are employed, 6 out of 18 are unemployed, 5 out of 18 are retired

#### Acute pain review and hospital course

6 out of 18 seen in the chronic pain service in the preceding year.

2 out of 18 seen for chronic pain by another service (rheumatology).

3 out of 18 referred for specialist pain review but appointment awaited.

Average duration of hospital stay = 8.8 days (range 2 to 27)

Face to face encounters with pain team = 1.4 per patient

Multiple pain triggers present in 4 patients. Single site pain: Back (6), Facial (3), Abdo (2), Chest (1), Pelvic (1), Post stroke (1)

Investigations undertaken as inpatients; Bloods (18), MRI (13), CT (4), XR (3), USS (1)

Three complications documented during admissions. Hospital acquired pneumonia (1), inpatient falls (2)

3 out of 18 had more than one admission in the month of October (for the same pain concern)

#### Estimated costs

Per acute on chronic pain flare £3184, for month of October 2025 - £57,312<sup>1,2,3</sup>

**Conclusion:** This service evaluation demonstrates a significant cost and time burden associated with managing chronic pain patients undergoing a flare of their pain by our acute pain services. A well-funded, multidisciplinary outpatient pain service with efficient triaging and clear flare management protocols may alleviate the pressure on our acute pain services, improve patient outcomes, and reduce NHS costs. We will expand this analysis for a minimum of three months and consider the ongoing financial and resource impact, this will subsequently inform strategic planning and resource allocation to optimize care for this patient group.

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## P-09

### Central sensitisation response following occipital nerve stimulation ten-year prospective follow-up

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**Background:** Central sensitization and impaired conditioned pain modulation (CPM) response has been associated with chronic migraine. Migraine patients can present with allodynia consequently. Occipital nerve stimulation (ONS) is a neuromodulation procedure used in patients with chronic cluster headaches and migraines. We report on long term outcome data on the effects of ONS on central sensitization. Efficacy outcomes for ONS typically employ standardized headache questionnaire measures. However, more objective tests of endogenous pain mechanisms, such as Quantitative Sensory Testing (QST), have not been utilized to measure whether reported outcomes are paralleled by QST changes following the long-term implementation of ONS. Our group has published one-year outcomes in central sensitization following ONS (1).

**Aim:** This prospective study Aimed to evaluate whether QST detects a change in chronic migraine pain and provides more long-term outcome data for patients receiving ONS.

**Methods:** Six patients, 3 new persistent daily headaches, two chronic migraines, and one chronic cluster headache were implanted between 2013 and 2015 with percutaneous leads placed bilaterally parallel to the greater occipital nerve; IPG was a Genesis/ Prodigy St Jude Medical, Plano, TX, USA now Abbott systems. Baseline QST and questionnaires were completed and monitored for up to 12 months and then annual review for 10 years.

**Results:** Patients showed substantial reductions in headache-related disability and quality of life measures. Patients with intractable migraine demonstrated impaired/reduced CPM in all but one patient at baseline, and this reverted to an increased CPM at 12 months. Then, this was maintained at the 10-year visit.

**Conclusion:** This is a long-term prospective follow-up investigating the effect of central sensitization following ONS. Responders showed substantial reductions in headache-related disability and improved conditioned pain modulation over a 10-year.

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## P-10

### Bridging the gap: Tackling chronic cancer pain in community care—challenges and opportunities

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**Background:** Uncontrolled cancer pain is a leading driver of unscheduled and out-of-hours (OOH) contacts in the UK. Primary and community care are the first point of contact for many people living with chronic cancer pain, yet care is constrained by variable implementation of guidance, workforce pressures, and fragmented pathways between generalist and specialist services. These systemic weaknesses disproportionately affect older adults, people in deprived areas, and those with limited digital access, contributing to inequities in pain control and quality of life.

**Aim:** To synthesise evidence on the challenges and opportunities for managing chronic cancer pain in primary and community care, focusing on healthcare professional factors, system-level integration, patient engagement, and equity barriers.

**Methods:** A scoping review (PRISMA-ScR aligned) of six databases (2000–Jan 2025) identified 32 eligible studies spanning RCTs, qualitative, quantitative, mixed-Methods and systematic reviews. Narrative synthesis grouped findings under thematic headings: guidelines/assessment, education and training, integration of services, supported self-management, digital technologies, and equity barriers.

## Results:

**Healthcare-professional level:** Time constraints in primary care consultations were frequently cited as barriers to optimal mechanism-based pain assessment. Many GPs and community nurses reported limited training and confidence in opioid prescribing and neuropathic pain management. Surveys and qualitative work highlighted unclear roles and lack of structured collaboration with specialist pain and palliative teams, resulting in inconsistent adoption of multimodal approaches and delayed escalation when pain is refractory. Educational programmes for clinicians improved knowledge but did not reliably change behaviours without parallel pathway redesign and ongoing mentorship.

**System level (service integration and digital):** Integration between generalist and specialist services was variable, with poor interoperability between electronic health record (EHR) systems impeding timely information flow, shared care plans, and proactive review. Telemedicine and eHealth platforms demonstrated feasibility and moderate effectiveness for symptom tracking and access; however, scaling was hampered by fragmented digital ecosystems, limited primary care IT capacity, and the absence of standardised triage/assessment protocols embedded within EHR workflows. Operationalisation of digital pain monitoring systems in primary care requires commissioning support, digital ecosystem integration, and role clarity across teams.

**Patient level (education, digital tools, supported self-management):** Educational and coaching interventions improved pain knowledge, self-efficacy, and medication adherence. When combined with digital tools (e.g., pain diaries, tailored advice), patients felt empowered to manage symptoms and seek help earlier. Engagement was highest when tools were simple, personalised, and supported by clinicians.

**Equity (socioeconomic and digital exclusion):** Socioeconomic deprivation and digital exclusion remain major obstacles. Patients in rural or deprived areas, older adults, and those with low digital literacy faced reduced access to specialist input and telehealth solutions. Addressing these gaps requires low-tech alternatives, caregiver training, and community partnerships.

**Conclusion:** Improving chronic cancer pain care in primary and community settings demands a coordinated, multimodal strategy: (i) workforce development targeting opioid and neuropathic pain competencies, supported by protected time and mentorship; (ii) standardised, EHR-embedded triage and assessment, with clear escalation

triggers and shared care plans across pain and palliative services; (iii) patient education plus simple, integrated digital tools to enable supported self-management and earlier help-seeking; and (iv) equity-focused commissioning to address socioeconomic and digital exclusion (connectivity, devices, literacy, caregiver enablement). Policy and practice should prioritise interoperable digital infrastructure, team-based pathways, and targeted inclusion initiatives to reduce disparities and improve pain outcomes in the community.

## P-11

### Does intrathecal drug delivery for cancer pain improve cognitive function?

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**Background:** Cognitive impairment is common in cancer patients with up to 75% of patients undergoing cancer treatment reporting decline in cognitive function(1). This may include problems with memory, executive functioning, and attention. Decline in cognitive function is likely to be multifactorial including the cancer itself, cancer treatments, psychological symptoms, sleep quality, analgesia including opioids, and pain.

When implanting intrathecal drug delivery devices (ITDD) for cancer pain management as part of a tertiary referral service we have subjectively noted significant improvements to patient's cognitive function after the withdrawal of systemic analgesia and the improvement in pain. Family members and patients have also identified this. This may well be due to improved pain control, reduced systemic analgesia and improved sleep.

Many outcome measures after pain intervention are focussed on pain scores however improvements in cognition could significantly improve function, independence and quality of life for patients. Demonstrated improvements in quality of life after intrathecal drug delivery may, in part, be due to improved cognition(2).

**Aim:** Identify if existing data including 4AT scores and quality of life scoring tools (EORTC QLQ-C30) demonstrates evidence of improved cognitive function following ITDD.

Identify and introduce a validated scoring tool to assess cognitive function pre and post pain intervention.

**Methods:** All patients undergoing ITDD in a 10-year period, 2015-2025. Compared 4AT and quality of life cognitive function sub scale Results pre ITDD and post implantation.

**Results:** A total of 39 patients had ITDD during the time period. Two were excluded due to incomplete 4AT data. The mean 4AT score (out of a maximum 12) improved post ITDD (pre 0.81 compared to 0.14 post). This was due to seven patients having an improvement in 4AT. No patients had a decline in 4AT. The 4AT score of the remaining 30 patients stayed the same, with 28 of these scoring 0.

Quality of life cognitive function sub scale Results were available for 18 patients. This demonstrated a small reduction (improvement) in mean score from 3.56 (pre) to 3.5 (post) out of a maximum score of 8.

**Conclusion:** 4AT does appear to improve, post ITDD, in patients who had an elevated score pre ITDD. This may be due to improved cognitive function however 4AT was designed to screen for delirium rather than to assess cognition. It is not sensitive enough to identify more subtle cognitive changes with the majority of patients scoring 0 pre and post ITDD.

Quality of life cognitive function sub scale Results suggest a trend to improved cognitive function post ITDD. This is however reliant on patient reporting rather than objective assessment.

In order to assess cognitive function more accurately and hopefully identify more subtle changes we conducted a literature search for a suitable tool. We stipulated that the tool should be quick to administer, not burdensome for patients and reproducible. We have identified mini-ACE as a potential tool and have trialled it with some patients. We now plan to introduce it routinely pre ITDD then follow-up at 2 weeks post implantation. We hope to present Results on this in the future to further this important research area.

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## P-12

### Embracing neurodiversity in chronic pain management

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**Background:** Chronic pain is a complex, multifactorial condition affecting a significant portion of the global population, with management historically focused on a one-size-fits-all biomedical model. However, this conventional approach frequently fails to address the diverse needs of the number of neurodivergent individuals increasingly encountered in chronic pain clinics, such as those with autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD). Emerging evidence suggests a strong correlation between neurodiversity and chronic pain conditions like fibromyalgia and hypermobility spectrum disorders, highlighting the need for a more nuanced, individualised approach. The unique sensory processing, executive skills, and communication differences experienced by neurodivergent people may be overlooked, leading to underdiagnosis, undertreatment, and a negative experience of care within standard pain services. This gap in understanding underscores the critical need to tailor pain management strategies to a neurodiverse population.

**Aims:** The project's primary objective was to explore the intricate relationship between neurodiversity, hypermobility, and chronic pain, with a specific focus on identifying traits —namely, executive dysfunction and abnormal sensory profiles—that could serve as potential targets for developing neurodiversity-affirming pain management strategies.

**Methods:** This project was designed as a quality improvement initiative by the interdisciplinary community pain team in East Sussex, delivered by the Sussex Partnership Foundation Trust (SPFT). Data collection took place over 7 months, from October 2024 to April 2025. During this time, every new patient who attended the service was invited to participate after being fully informed and providing consent. The project was guided by a dedicated working group from the pain team, along with valuable insights from external colleagues and our patient advisory network. In addition to the standard new patient assessment, three key components were collected: the Beighton score to assess hypermobility, the Executive Skills Questionnaire (ESQ) to

evaluate executive function, and the Adult and Adolescent Sensory Profile (AASP) to measure sensory processing. Statistical analysis was undertaken using the Chi-square and Fisher's exact tests, as appropriate.

**Results:** The study included 82 participants, predominantly female, of whom 27% (n=22) identified as neurodivergent through confirmed diagnoses, waiting-list status, or self-identified traits. A significant finding was a strong correlation between neurodiversity and hypermobility; 55% of the neurodivergent group had a high Beighton score, compared to 28% of the neurotypical group.

Sensory profile analysis also revealed significant differences. The neurodivergent group scored significantly higher on measures of sensory sensitivity, sensation avoidance, and low registration (defined as a lack of response or a slower-than-normal response to a stimulus). While both groups faced challenges with executive skills, the neurodivergent cohort exhibited more widespread deficits across all 12 measured domains, highlighting broader challenges than the more specific "hotspots" seen in the neurotypical group.

**Conclusion:** This project demonstrates that neurodiversity is a crucial consideration in chronic pain management. By recognising the specific challenges faced by neurodivergent individuals, clinicians can move beyond conventional models to implement more effective, personalised care. Future research and clinical practice should focus on developing pain services to better support the care experience for the neurodiverse population, including recognising the presence of comorbid hypermobility. This should involve validating specific interventions for managing hypermobility, executive dysfunction, and sensory processing difficulties to improve outcomes and enhance the quality of life for this underserved group.

#### P-14

##### Evaluation of a digital solution for the assessment and management of pain among people with dementia in Scottish care services

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**Background:** Pain management is a critical aspect of dementia care, and effective strategies must be tailored for these individuals. PainChek® is designed to assess pain using artificial intelligence and facial recognition technology to identify pain-related cues.

**Objectives:** The evaluation objectives were to determine the outcomes of implementing PainChek® in Scotland, analyse the impact of PainChek® on Scottish care homes, establish if PainChek® is beneficial and worth further investment/rollout, and identify barriers and facilitators for the implementation of PainChek®.

**Methods:** A mixed-Methods, person-centred approach informed by realist principles and appreciative inquiry was used to conduct a desk review of literature, analysis of data from the Care Inspectorate pilot projects and a survey with care staff involved in the use of PainChek®. Data collection, sampling and analysis strategies were developed and refined through consultative feedback. Ethical approval for the evaluation was granted by Edinburgh Napier University.

**Results:** Staff perceived PainChek® as a user-friendly and effective tool that enhanced their decision-making, accurate pain assessments, and a greater capacity to provide person-centred care. The pilot projects showed an increase in pain assessments and medication optimisation. Some settings experienced improved quality of life indicators, such as fewer falls, reduced stress, distress, dependency

scores, and increased weight. Facilitators for the adoption of PainChek® included strong management support, comprehensive training, and adequate resources. Potential barriers identified were technical and logistical challenges, resistance to change, time constraints, and concerns about costs. Preliminary cost analysis suggested potential savings, but more research is needed.

**Conclusions:** PainChek® shows promise as a tool to enhance pain management among people with dementia by improving assessments and leading to better medication management and quality of life for residents. However, further research, particularly on the cost-benefits and addressing implementation barriers, is crucial for making informed decisions during its rollout in Scotland.

#### P-15

##### Preliminary findings of a pilot study on the effect of art therapy on chronic pain: Assessing impact on quality of life, sleep quality, memory, and pain intensity

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**Background:** Chronic pain is a complex experience influenced by psychosocial and biological factors, often associated with reduced quality of life, sleep quality, and cognitive complaints. Current guidelines recommend combining pharmacological and non-pharmacological approaches; however, evidence for creative arts-based interventions remain limited. Art therapy may offer a low-risk complementary intervention by integrating psychotherapeutic principles with creative expression to address emotional distress and pain-related experiences. This pilot study explores the preliminary effects of a structured art therapy programme for individuals with chronic pain, addressing a gap in the existing literature.

**Aim:** To explore the preliminary effects of a 4-week group art therapy intervention on pain intensity, quality of life, sleep quality, and subjective cognitive complaints in adults with chronic pain.

**Methods:** This single-arm pilot study included 13 participants with chronic pain (9 female,  $M_{age} = 56.54$ ,  $SD = 12.23$ ) who were recruited from a hospital-based pain clinic. Participants took part in the first 4 weekly group art therapy sessions of a planned 8-week structured art therapy protocol, delivered by a certified art therapist. Participants attended 3-4 sessions. Each 90-minute session involved theme-based creative activities followed by guided group reflection. Validated self-report measures assessing pain intensity (Visual Analogue Scale - VAS), quality of life (The World Health Organization-Five Well-Being Index - WHO-5), sleep quality (Pittsburgh Sleep Quality Index - PSQI), emotional distress (Hospital Anxiety and Depression Scale - HADS), and subjective memory and attention complaints were administered at baseline and mid-intervention (week 4). Preliminary analyses comparing baseline and week 4 outcomes were conducted

using Wilcoxon signed-rank tests. Ethical approval was obtained from the Ethics Committee of the Local Health Unit of Viseu Dão-Lafões.

**Results:** Preliminary analyses using Wilcoxon signed-rank tests revealed no significant differences ( $p > .05$ ) across outcomes. However, effect sizes indicated small-to-moderate improvements. Pain intensity showed a moderate improvement from M1 to M2 (VAS:  $Z = -1.11$ ,  $r = -0.31$ ), whereas changes in anxiety and depression subscales were negligible to small (HADS-Anxiety:  $Z = -0.16$ ,  $r = -0.04$ ; HADS-Depression:  $Z = -0.31$ ,  $r = -0.09$ ). Global HADS scores did not change meaningfully ( $Z = 0.00$ ,  $r = 0.00$ ). In contrast, health-related quality of life exhibited the largest effect, approaching that of a large improvement (WHO-5 total:  $Z = -1.78$ ,  $r = -0.49$ ). Subjective memory and attention complaints, as well as global sleep quality, showed small-to-moderate effects in the expected direction, with reductions in symptom reports and sleep disturbance (subjective complaints:  $Z = -0.39$ ,  $r = -0.11$ ; global sleep score:  $Z = -0.77$ ,  $r = -0.21$ ).

**Conclusion:** Although statistically significant differences were not observed, the consistent pattern of effects suggests potentially clinically meaningful changes associated with participation in the art therapy intervention, particularly in core dimensions of the chronic pain experience such as pain intensity and quality of life. The lack of statistical significance is likely attributable to the small sample size and limited statistical power, which are characteristic of exploratory pilot intervention studies. The magnitude and direction of the observed effects may indicate the potential clinical relevance of art therapy as a complementary intervention for individuals with chronic pain. Future research employing larger samples, controlled designs, and follow-up assessments is warranted to confirm and extend these preliminary findings.

## P-16

### Supporting the maintenance of physical activity following pain management programmes: a qualitative exploration of potential intervention components

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**Background:** Pain management programmes facilitate self-management and rehabilitation of persistent musculoskeletal pain. Physical activity promotion is a core component of these programmes. It is essential patients maintain a higher level of physical activity long-term after the programme to achieve ongoing benefits. However, patients often struggle with long-term maintenance of physical activity due to many potential barriers. Further support following pain management programmes may help patients to overcome these barriers and maintain their physical activity.

**Aim:** This study Aims to explore the potential components of an intervention to support the maintenance of physical activity following pain management programmes for people with persistent musculoskeletal pain.

**Methods:** This was a qualitative study. Participants were people with persistent musculoskeletal pain that had completed a pain management programme six to 18 months prior to invitation, physical activity partners (people that supported patient participants with physical activity), and pain management programme healthcare professionals. Participants were recruited from three NHS pain management programmes and required to give informed consent. Purposive sampling was used to ensure patient participants had varied success at maintaining physical activity and healthcare professionals represented different professions. Healthcare professionals and people with persistent musculoskeletal pain without physical activity partners participated in individual semi-structured interviews. People with persistent musculoskeletal pain with physical activity partners participated in dyadic interviews. The interview guide consisted of open questions on potential intervention components to support long-term physical activity maintenance. Questions were also guided by the Template for Intervention Description and Replication checklist to ensure all important considerations for intervention development were covered. Interviews were conducted in-person, via videoconference or via telephone and were audio recorded and transcribed verbatim. Initial coding of transcripts was conducted inductively. All codes were then mapped to the intervention types in the Behaviour Change Wheel; a behaviour change intervention development framework. Themes representing different intervention components were then generated within each intervention type.

**Results:** Thirty-two interviews were conducted. Twenty-four were with people with persistent musculoskeletal pain; seven of these were dyadic with physical activity partners. Eight interviews were with healthcare professionals, including four physiotherapists, two occupational therapists and two psychologists. Sixteen patient participants were female, seven were male and one was non-binary. Median age of patient participants was 54 years, 12 identified as consistency active and 12 identified as inconsistently active or inactive. Data were mapped to five of the Behaviour Change Wheel intervention types: Education, Training, Environmental Restructuring, Modelling and Enablement. Education includes two themes relating to patient and significant other education about pain and physical activity. Training consists of one theme, which regards guidance on doing physical activity. Modelling consists of one theme, which describes how the intervention could help patients learn from previous pain management programme patients. One theme within Environmental Restructuring describes the use of prompts and reminders. Three other themes within Environmental Restructuring, that also crosscut with Enablement, include post-programme healthcare professional support, facilitating peer support and enhancing access to community activity opportunities. Enablement also includes themes that relate to monitoring physical activity and providing tools to independently regulate physical activity maintenance.

**Conclusion:** This study generated insights into the potential components of an intervention to support patients to maintain physical activity long-term following pain management programmes. The findings suggest that such an intervention could consist of multiple components, including ongoing education, training, learning from previous programme attendees, healthcare professional support, peer support, access to community activity opportunities and activity monitoring. These findings will be used to provide stakeholders with ideas during co-design workshops where a physical activity maintenance intervention for people with persistent musculoskeletal pain that have completed pain management programmes will be developed.

## P-17

### Exploring the Role of Lumbar Medial Branch Blocks in Identifying Clinical Benefit from Restorative Neurostimulation in Chronic Low Back Pain: A Pilot Study

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**Background:** Low back pain (LBP) is the leading cause of years lived with disability in the United Kingdom and represents a significant clinical challenge. When symptoms persist beyond 12 weeks, LBP is classified as chronic (CLBP) and often remains debilitating despite multimodal management, including physiotherapy, psychological therapy, and pharmacologic treatment. This persistence suggests that important pathoanatomical contributors to mechanical CLBP may remain insufficiently addressed in some patients.

The lumbar multifidus muscle may represent one such contributor. Multifidi are largest in the lumbar spine and function as key segmental stabilisers, preventing excessive intervertebral motion and maintaining spinal integrity during movements. In addition to their biomechanical role, the multifidus muscles play an important proprioceptive function, providing sensory input essential for postural control, movement coordination, and spinal positioning. Multifidus dysfunction—including atrophy, fatty infiltration, and impaired neuromuscular control—has been consistently associated with mechanical CLBP.

Multifidus restorative neurostimulation (ReActiv8®, Mainstay Medical, Dublin, Ireland) has been developed to address this dysfunction in patients with intractable mechanical CLBP. The therapy electrically elicits multifidus muscle contractions via stimulation of the L2 medial branch of the dorsal ramus, delivered for two 30-minute sessions daily. Preclinical studies suggest beneficial effects on muscle structure and proprioceptive function, while randomized controlled trials and real-world evidence demonstrate reductions in pain and disability and improvements in quality of life in patients with long-standing mechanical CLBP.

As with most therapies, clinical response to restorative neurostimulation is variable, highlighting the need for improved Methods of identifying patients most likely to benefit. Given that the medial branch of the dorsal ramus is both the therapeutic target for restorative neurostimulation and the anatomical structure targeted by medial branch blocks used in the evaluation of facet-mediated pain, responses to medial branch blocks may provide insight into treatment responsiveness and time to benefit.

**Aim:** This pilot study Aimed to explore whether patient responses to lumbar medial branch blocks are associated with clinically meaningful benefit from multifidus restorative neurostimulation in persistent mechanical CLBP.

**Methods:** This prospective observational cohort study followed patients for up to one year following activation of restorative neurostimulation. Eligible participants had a diagnosis of mechanical CLBP and had not achieved adequate or durable symptom relief after at least 12 weeks of conservative management. After informed consent, participants attended baseline assessments and underwent L2 and L2–L5 medial branch blocks on separate occasions. Pain and disability were measured using the Numerical Pain Rating Scale (NPRS) and Oswestry Disability Index (ODI). Healthcare-related quality of life was measured with Euroqol's 5-dimension-5-level questionnaire (EQ5D) and self-reported improvements were measured by patient global impression scales.

Participants demonstrating >60% pain reduction following both injections were classified as Group 1; those responding to one injection as Group 2; and those responding to neither injection as Group 3. Participants then underwent implantation of the restorative neurostimulation system, which was activated two weeks post-implantation. Follow-up assessments were conducted at 1-, 3-, 6-, and 12-months post-activation.

**Results:** Thirty-five patients were enrolled (24 females, 11 males; mean±SD age=48±10 years). Thirty-three participants completed both medial branch block visits and were allocated to Group 1 (n=7), Group 2 (n=13), or Group 3 (n=11). Twenty-eight participants proceeded to implantation. Follow-up completion rates were 93% at 1, 3, and 6 months and 82% at 12 months. Final follow-up visits are ongoing and will be available by April 2026.

**Conclusion:** This pilot study will provide preliminary insight into the potential utility of responses to lumbar medial branch block injections for identifying patients with mechanical CLBP who may benefit from multifidus restorative neurostimulation.

## P-19

### Nurses' knowledge towards opioid use disorder: Cross-sectional survey

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**Background:** Opioids are commonly used in pain management. However, their use can heighten the risk of developing Opioid use disorder (OUD) (1, 2). OUD is a pressing global health concern that exerts a significant strain on health care systems. The ramifications of OUD are profound, impacting not only the affected individuals but also their families and the broader health care system (3, 4). There is a research gap concerning the understanding of nurses' knowledge towards OUD patients, especially in regions like Qatar and the broader Gulf area.

**Aim:** To explore the knowledge of nurses caring for patients with OUD in a tertiary hospital.

**Methods:** Using cross-sectional correlational descriptive survey design, the data was collected from a sample of 350 registered nurses working in the medical, surgical wards and emergency department. Data collection utilized a modified version of the knowledge towards OUD questionnaire (5). Various statistical tests were used to evaluate the nurses' knowledge towards Opioid Use Disorder.

**Results:** The study showed that nurses had poor knowledge level about OUD with an overall mean score of 61.5% with a quarter of respondents scored below 50%. Furthermore, the study showed that male nurses and nurses with higher academic qualifications had higher knowledge score compared to diploma degree holders.

**Conclusion:** This study showed that acute care nurses had poor knowledge towards OUD. The insights gained from this study are invaluable for clinicians, policymakers, and researchers in pain management, ultimately enhancing care quality for OUD patients. Given the identified knowledge gaps, immediate action in the form of targeted educational programs is recommended. Future research, including qualitative study, could provide greater insights into nurses' knowledge and skills towards care of patients with OUD.

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## P-21

### Exploring the acceptability of psychosocial interventions in women with endometriosis: A Qualitative study

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Endometriosis is a systemic, inflammatory condition affecting approximately one in ten women. It is characterised by chronic inflammation and scarring that contribute to pain, fatigue, and infertility, all of which can profoundly impair quality of life. Individuals with endometriosis frequently encounter delegitimization of their physical symptoms, with these symptoms often dismissed or attributed to psychological causes. Such experiences can erode trust in healthcare providers and shape attitudes toward non-medical treatment options, including psychosocial interventions (PSIs). Although PSIs show promise in supporting the broader psychosocial impact of endometriosis, they remain underexplored, and little is known about how acceptable and effective individuals with endometriosis perceive these approaches to be.

This study adopted a qualitative design to generate rich, nuanced insights into individuals' perceptions of PSIs. We conducted semi-structured interviews with 25 people living with endometriosis, exploring their lived experiences, views on PSIs, and the factors they felt influenced their willingness to engage with such interventions. Interviews were analysed using reflexive thematic analysis, which enabled a detailed examination of the data and the identification of meaningful patterns and themes.

Our analysis generated themes relating to both key motivators and barriers to PSI engagement. Barriers included stigma, mistrust in healthcare providers, perceptions of PSIs as overly reductive, and a range of practical obstacles. These barriers reflected a broader pattern of limited awareness of PSIs, experiences of inadequate care, and the persistent stigma surrounding women's pain and the discussion of endometriosis symptoms. Conversely, participants identified several motivators, including gaining a greater sense of control and agency, reducing isolation through connection with others, and reclaiming aspects of their identity highlighting the meaningful benefits PSIs can offer.

These findings provide important insights for improving PSI implementation and engagement. They underline the complex interplay of factors that support or hinder participation and emphasise the need

for tailored, acceptable, and well-communicated psychosocial approaches for individuals living with endometriosis.

## P-22

### Pharmacological and Non-Pharmacological Interventions in Early-Phase Fibromyalgia Trials Among Older Adults

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**Background:** Fibromyalgia is a chronic pain syndrome that disproportionately affects older adults and is frequently associated with multimorbidity and polypharmacy. Evidence guiding early-phase interventions in individuals aged  $\geq 65$  years remains limited. This study Aims to systematically characterize completed early-phase clinical trials in older adults with fibromyalgia registered on [ClinicalTrials.gov](https://clinicaltrials.gov).

**Aim:** The Aim of this study was to systematically analyze and describe the characteristics of completed Early Phase 1 and Phase 1 clinical trials involving older adults ( $\geq 65$  years) with fibromyalgia registered on [ClinicalTrials.gov](https://clinicaltrials.gov), with a specific focus on study design, types of interventions, enrollment size, and primary outcome measures, in order to identify research patterns, evidence gaps, and future directions for early-phase fibromyalgia research in the older population.

**Methods:** A registry-based descriptive analysis was conducted using [ClinicalTrials.gov](https://clinicaltrials.gov). The search strategy included the condition fibromyalgia, study status completed, age group older adult ( $\geq 65$  years), and phases Early Phase 1 and Phase 1. Extracted variables included study design, intervention type, phase, enrollment size, and primary outcomes. Data were summarized using descriptive statistics.

**Results:** Eighteen completed studies met the inclusion criteria. All were interventional trials, predominantly randomized in design, and mainly conducted in Early Phase 1 or combined Phase 1/2 settings. Interventions were heterogeneous and included pharmacological agents (e.g., antidepressants, antibiotics, vitamins, and combination therapies), complementary and alternative medicines, and non-pharmacological modalities such as neuromodulation. Planned enrollment sizes were generally small to moderate, reflecting early-phase exploratory objectives. Primary outcomes commonly focused on pain intensity, functional improvement, symptom severity, and safety or tolerability endpoints. Despite completion status, the majority of studies did not report posted Results within the registry.

**Conclusion:** Completed early-phase clinical trials in older adults with fibromyalgia are limited in number, heterogeneous in interventions, and characterized by small sample sizes and under-reporting of Results. These findings highlight a significant evidence gap in early-phase research for fibromyalgia in the older population and underscore the need for larger, methodologically robust trials with transparent Results reporting to inform age-appropriate therapeutic strategies.

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## P-23

**Patient-reported and objective functional improvements following restorative neurostimulation in a real-world, single-physician cohort with chronic mechanical low back pain**

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**Background:** Chronic mechanical low back pain (CLBP) represents a substantial and persistent source of disability, negatively impacting physical function, quality of life, and healthcare utilization. Many patients continue to experience disabling symptoms despite prolonged engagement with conservative treatments, likely due to underlying neuromuscular dysfunction and impaired spinal stability. Restorative neurostimulation, which activates the lumbar multifidus through stimulation of the L2 medial branch of the dorsal ramus, has emerged as a promising therapeutic option, with clinical trials demonstrating durable reductions in pain and disability. However, there remains a need to evaluate how these benefits are reflected across patient-reported and objective functional outcomes in routine clinical practice.

**Aim:** To evaluate real world, longitudinal changes in pain intensity, disability, health related quality of life, neuropathic pain features, and objective functional performance in patients with CLBP treated with restorative neurostimulation in a single physician's clinical practice.

**Methods:** This ongoing prospective, real world analysis includes patients CLBP who underwent implantation of a restorative neurostimulation device in a single clinical practice. Enrolled patients were implanted (currently N=40) and followed longitudinally from baseline through multiple post activation timepoints, including 6 weeks, 3 months, 6 months, and 12 months.

Clinical outcomes were assessed using patient reported measures of pain intensity with the Visual Analog Scale (VAS) for pain "now," average pain, and worst pain experienced, as well as disability using the Oswestry Disability Index (ODI). Health related quality of life was evaluated using the EuroQol 5D (EQ 5D), and neuropathic pain features were assessed with painDETECT. Functional performance was objectively measured using a one minute sit to stand test. Follow up data were available for 29 patients at 6 weeks, 33 at 3 months, 28 at 6 months, and 19 at 12 months. Descriptive statistics were used to examine trends over time.

**Results:** Across all outcome domains, progressive improvements are being observed following activation of restorative neurostimulation. With the current data, pain intensity decreased consistently over time, with VAS scores for "pain now" remaining stable initially and then improving from a baseline value of 5.0 to 4.4 at 6 months and 3.3 at 12 months. Average pain declined from 6.7 at baseline to 5.9 at 6 weeks, with continued improvement to 5.2 at 6 months and 4.4 at 12 months. Worst pain experienced similarly improved from 8.7 at baseline to 7.0 at 6 months and 6.1 at 12 months.

Functional disability, as measured by the ODI, showed clinically meaningful improvement over time, decreasing from a baseline score of 48.0 to 39.9 at 3 months, 35.9 at 6 months, and 35.4 at 12 months. Health related quality of life improved in parallel, with EQ 5D scores increasing from 0.466 at baseline to 0.577 at 3 months and 0.606 at 12 months. Neuropathic pain features, reflected by painDETECT scores, declined from 13.2 at baseline to approximately 10.0 at both 6 and 12 months.

Objective functional capacity improved early and progressively, with one minute sit to stand repetitions increasing from a baseline mean of

11.1 repetitions to 15.0 at 6 weeks, 16.6 at 6 months, and 18.1 at 12 months.

**Conclusion:** In this ongoing real world, single physician cohort of patients with CLBP, sustained improvements across pain intensity, disability, quality of life, neuropathic pain features, and objectively measured physical function are likely associated with restorative neurostimulation. These findings complement existing clinical trial evidence and add to the therapeutic impact of restorative neurostimulation in routine clinical practice. For patients with CLBP who have not responded to conservative therapies, these Results highlight the potential of restorative neurostimulation to address both symptomatic burden and functional recovery over time.

## P-24

**One-year real-world outcomes of restorative multifidus neurostimulation for chronic mechanical low back pain: Experience from York Hospital, York, UK**

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**Background:** Chronic mechanical low back pain represents a significant societal burden with substantial economic implications for both individuals and healthcare systems. For patients with pain arising from impaired neuromuscular control of the multifidus muscle, restorative neurostimulation has emerged as a clinically effective therapy. Its efficacy and durability have been demonstrated out to five years<sup>1</sup> from a randomized controlled trial, and durability out to five years in real-world evidence.<sup>2</sup> At York Hospital, UK, we have contributed to the evaluation of this novel treatment.

**Aim:** We present here the experiences of our patients with their outcomes out to 12 months of follow-up.

**Methods:** Patients were selected for restorative multifidus neurostimulation implantation if they had activity-limiting, moderate-to-severe, refractory, mechanical chronic low back pain, failed conservative therapy including medications and physiotherapy, had a positive multifidus lift test<sup>3</sup> (suggesting impaired multifidus muscle control), and no indications for spine surgery. Outcomes were evaluated using the Brief Pain Inventory (BPI) questions evaluating pain "at its worst", "at its least", "on the average", and "pain you have right now", the overall BPI score, and Euroqol's EQ-5D for quality of life. Twelve-month outcomes were compared to baseline outcomes.

**Results:** Eighteen patients treated with a restorative multifidus neurostimulator (8F, 10M; mean age =53 yrs; age range: 27-75 yrs) were available for 12-month follow-up outcomes. The cohort at baseline demonstrated a mean ( $\pm$ SE) BPI overall at 49.7 ( $\pm$ 3.0) (pain at its "worst", "best" and "right now" were 8.2( $\pm$ 0.4), 3.8( $\pm$ 0.5) and 5.7( $\pm$ 0.7), respectively), and EQ-5D at 0.430( $\pm$ 0.068).

At 12 months after restorative neurostimulation therapy, BPI overall improved to 31.3 ( $\pm$ 5.7) ( $p=0.002$ ). Pain at its "worst", "best" and "right now" also improved and were 5.4( $\pm$ 0.8) ( $p=0.009$ ), 2.7( $\pm$ 0.7) ( $p=0.052$ ) and 3.8( $\pm$ 0.6) ( $p=0.024$ ), respectively. EQ-5D improved by 0.606( $\pm$ 0.056) over baseline ( $p=0.01$ ).

**Conclusion:** Patients with chronic low back pain secondary to impaired neuromuscular control have historically had limited therapeutic options. In this cohort, twelve-month outcomes demonstrated significant real-world improvements in both pain and quality of life following restorative neurostimulation.

The promising aspects of this therapy are its minimally invasive approach, its durable Results and its mechanism that fundamentally addresses the cause of the patient's pain rather than having a palliative or destructive approach. Restorative neurostimulation demonstrated significant mechanical chronic low back pain reduction and quality of life gains across the cohort and regardless of age.

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## P-25

### Pilot study exploring the relative impact of pain and fatigue in fibromyalgia syndrome

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**Background:** Fibromyalgia syndrome (FMS) is a condition typified by multiple symptoms including widespread pain, stiffness and fatigue (Mease et al. 2007). Symptom management often focuses on pain severity, and fatigue can be overlooked. This may be because pain is more easily described and quantified in a clinical setting and can be managed with pharmacotherapy (Excellence 2022). Clinical trials in FMS often use pain as the primary outcome, consistent with international recommendations regarding the use of primary outcome measures in chronic pain disorders (Dworkin et al. 2005).

**Aim:** In this pilot study, we aimed to explore the relative impact of pain and fatigue on various psychological and physical aspects of life for patients with FMS and determine the relative importance of each.

**Methods:** Eight variables were chosen based on patient and public involvement and current symptom self-rating tools. A questionnaire was used to gather data for analysis. A 0–10-point scale assessed how much 'pain' and 'fatigue' impacted eight different physical and psychological variables, including mood, quality of sleep, ability to partake in hobbies. A single-answer question also asked respondents whether 'pain' or 'fatigue' had a greater overall negative impact on their quality of life. Independent samples t-tests and an X2 test were used for statistical analysis.

**Results:** Fatigue had a more significant negative impact than pain on mood, emotional resilience, and concentration ( $p = <0.01$  for each parameter). Fatigue was also found to be numerically more negatively impactful on all other parameters including quality of sleep, life satisfaction, and ability to carry out professional duties, ability to carry out domestic duties, and ability to partake in

hobbies. However, significantly more patients considered pain more impactful for their overall quality of life ( $p < 0.02$ ).

**Conclusion:** These Results are consistent with previous research highlighting the impact of fatigue in patients with fibromyalgia syndrome. Fatigue was found to be more negatively impactful than pain on several physical and psychological aspects of life in patients with fibromyalgia, indicating current treatment strategies focused on pain may need to change to achieve optimal symptom management for patients.

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## P-28

### Navigating pain and Parkinson's, experiences from Parkinson's care providers

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**Background:** Up to 85% of people with Parkinson's (PwP) experience pain. There can be an insufficient awareness of pain in Parkinson's from clinicians and pain can be under recognised and managed in clinical practice. PwP value healthcare professional support, yet at times can feel uncertain where to seek support for pain. PwP can be unsure of when to mention pain during Parkinson's clinical appointments and have highlighted for professionals to ask about pain. There is a need to speak

to professionals working with PwP to understand their experience and approach to supporting pain management.

#### Aims:

- To explore healthcare professionals experiences of managing pain in Parkinson's and support required
- To explore healthcare professionals understanding of pain in people with Parkinson's
- To explore barriers and facilitators to supporting pain management in Parkinson's
- To explore healthcare professional preferences on learning

**Methods:** A qualitative study using semi-structured interviews. Reflexive thematic analysis was used to analyse the data. Questionnaires were used to capture participants pain knowledge and attitudes. The Concept of Pain Inventory for Adults (COPI-Adult)<sup>1</sup> and Revised Neurophysiology of Pain Questionnaire (RNPQ)<sup>2</sup> were used. Participants completed these before the interview. Interviews were conducted online by a member of the research team, a physiotherapist. Data analysis is ongoing and involves three analysts.

**Results:** Ten UK based professionals were recruited including one occupational therapist, one nurse, one health and wellness advisor and seven physiotherapists. COPI-Adult scores ranged from 37-52 out of 52 with a median of 40. Higher scores with this measure show more alignment with contemporary pain science. The RNPQ scores are scored by the number of correct answers and ranged from 4-10 out of 12, with the mean being 8. Initial qualitative analysis has revealed uncertainty surrounding the links between pain and Parkinson's. Participants each classified pain, however there was some variation in how this was approached. The need for training and education specifically related to both pain and Parkinson's was found to be an area that needed focus.

**Conclusion:** There are different classification systems in the literature for pain and Parkinson's, and this variation was reflected when speaking to professionals who work with PwP. This may present some confusion in clinical practice when communicating pain. Uncertainty about links between pain and Parkinson's could be supported by bespoke education and training on the neurophysiology of both pain and Parkinson's, and how these may interact.

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#### P-29

##### Multimodal pain management: The "Curry" magic!

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**Background:** Patients often have difficulty understanding the concept of multimodal pain management (MMPM), which can lead to suboptimal pain control. To address this, the "curry" metaphor was

developed. At the 2025 British Pain Society meeting, Results from a survey of 45 patients were presented (1); we now present the Results from a cohort of 100 patients.

**Aim:** To explore patients' perspectives on how effectively the "curry" metaphor conveys the concept of MMPM and whether it may be useful in explaining other conditions managed using multimodal approaches.

**Methods:** A survey was designed and approved by the communication patient approval group at Bradford Teaching Hospitals NHS Foundation Trust (BTHFT). Patients who were seen by the BTHFT pain service and needed MMPM were informed of the concept with the help of the "curry" metaphor as explained below and also with the help of images during the consultation. Patients who were willing to participate in the survey were given a questionnaire containing four questions.

The "curry" metaphor describes managing pain by combining different treatments, much like using a variety of spices to make a good curry. Each spice has its own flavor, but together they enhance one another, creating a result that is better than any single spice alone. In the same way, long-standing pain is often best managed using a combination of approaches such as: physiotherapy, heat, massage, TENS, talking therapies, medications, injections, etc. When used together, these treatments can reduce pain more effectively and often with fewer side effects compared to a single treatment. This approach allows people to choose a mix of treatments that fit their needs and preferences.

**Results:** There were 40 male and 60 female patients. 74 patients had low back pain, 8 had neck pain and 18 had pain in other parts of the body. All 100 respondents agreed that the "curry" metaphor helped them understand the concept of MMPM. Seventy-eight (78%) reported being very likely to use multiple types of treatments to manage their pain, 21 (21%) were likely to do so, and one respondent (1%) was unsure. Sixty-eight (68%) respondents agreed and 31 (31%) somewhat agreed that understanding the concept of MMPM with the aid of "curry" metaphor had given them the confidence to manage their pain better and one respondent was already using their "own recipe". Additionally, 98 respondents (98%) agreed that the "curry" metaphor could be applied to other medical conditions requiring multiple treatment approaches.

Comments by patients: "As a patient it has allowed me to understand and manage my pain/treatment much better. This metaphor has helped not just pain but overall"; "This is very good analogy to help me to understand how to manage pain on a daily basis"; "Very good way to understand long term pain management, makes a lot of sense!"; "It has explained how a combination of strategies can help in easy to understand terms".

**Conclusions:** Our findings are important for people with pain because they show that the "curry" metaphor is a simple, acceptable, and effective communication tool that makes a complex concept easier to grasp, increasing their confidence and willingness to engage with multiple treatments. Improved understanding supports active participation in care and encourages self-management, which are essential for better pain control. The strong agreement that the "curry" metaphor could be applied to other conditions managed using multimodal approaches highlights its potential broader clinical utility. Additionally, culturally relevant alternatives can be used where curry is less familiar.

#### Reference

1. Multimodal pain management – Does the "curry" metaphor convey the message? *British Journal of Pain* 2025, Vol. 19 (1) Supplement 1, page 6 (PP-011).

## P-30

**Physiotherapy: The Power of “Brick Wall and Spine” Analogy**

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**Background:** Patients with spinal and musculoskeletal pain are commonly referred to physiotherapy but may not adhere to advice due to limited understanding of its role or unmet expectations after short treatment periods. The “brick wall and spine” analogy was developed to explain the importance of doing regular physiotherapy exercises. At the BPS meeting in 2025 the Results of a survey of 36 (1) patients was presented and we now present the Results of a cohort of 79 patients.

**Aim:** To evaluate patients’ perspectives regarding the usefulness of the “brick wall and spine” analogy to explain the importance of doing regular physiotherapy exercises.

**Methods:** A survey was designed and approved by the communication patient approval group at Bradford Teaching Hospitals NHS Foundation Trust (BTHFT). Patients who were seen by the BTHFT pain service and needed advice about physiotherapy were informed of the analogy as explained below and with the help of images during the consultation. Patients who were willing to participate in the survey were asked if the “brick wall and spine” analogy helped them to understand the importance of doing regular physiotherapy exercises. They were also asked how likely are they to do regular physiotherapy exercise if they had understood the analogy.

The “brick wall and spine” analogy: If a brick wall is not strong enough, we can support it with scaffolding. In the same way, if our spine is not strong enough, we can strengthen the muscles around it, so that the muscles can support the spine better. Regular physiotherapy exercises will help to strengthen the muscles around the spine just like the scaffolding on the weak wall.

**Results:** There were 32 male and 47 female patients. Seventy-four patients had low back pain and 5 had neck pain. All the 79 (100%) respondents agreed that the “brick wall and spine” analogy improved their understanding of doing regular physiotherapy exercises. Following the explanation, 50 (63%) reported being very likely and 25 (32%) likely to perform physiotherapy exercises regularly; 3 (4%) were unsure, and one did not respond

Comments by patients: “I found the beauty of the analogy in its simplicity. This analogy takes away complexity. What a wonderful patient focused concept”; “I found the analogy very helpful”; “Understanding the condition help me to know how to deal with it”; “Helpful in understanding it (role of physio) better”; “A very effective analogy”; “Giving a break down to show what is needed is a great help”.

**Conclusions:** Patients described the analogy as simple, effective and patient-focused, noting that it reduced complexity and improved understanding of the role of physiotherapy in managing spinal pain. Improved understanding increases confidence, motivation and willingness to engage in regular exercises, which are essential for effective self-management and long-term pain control. The “brick wall and spine” analogy supports active participation in care and can improve adherence to physiotherapy, ultimately enhancing outcomes. Additionally, the ‘brick wall and spine’ analogy could potentially be adapted to explain the importance of regular physiotherapy for patients with musculoskeletal pain in other parts of the body.

**Reference**

1. Power of analogies in explaining pain management concepts. British Journal of Pain 2025, Vol.19(1) supplement 1, page 32 (PP-060)

## P-32

**Evaluating physical activity for chronic musculoskeletal pain in physical therapy settings in Saudi Arabia: Scoping review**Mr Yousef Al Sharyah<sup>1</sup>, Prof. Mark I. Johnson<sup>1</sup>, Dr. Gareth Jones<sup>1</sup>, Dr. Kate Thompson<sup>1</sup><sup>1</sup>Centre for Pain Research, School of Health, Leeds Beckett University, Leeds, United Kingdom

Evaluating Physical Activity for Chronic Musculoskeletal Pain in Physical Therapy Settings in Saudi Arabia: Scoping Review

**Background:** Chronic musculoskeletal pain is a global health concern. It affects millions worldwide, significantly reducing quality of life and creates a substantial burden on healthcare systems. In Saudi Arabia, the prevalence of chronic musculoskeletal pain mirrors global trends, making it a pressing public health issue. Physical activity is recognised as a safe and beneficial intervention to help manage chronic pain. The Saudi government has made significant investment in initiatives to promote the integration of physical activity as part of daily life. Physical therapists play a pivotal role in promoting physical activity within clinical care, yet there is limited understanding of how this is implemented for people with chronic musculoskeletal pain in Saudi Arabia. Addressing this gap is essential to optimise physical therapy practice, align with national health priorities, and reduce the long-term impact of chronic pain on individuals and healthcare systems.

**Aim:** This scoping review Aimed to identify, map and report literature related to physical activity for health promotion in people with chronic musculoskeletal pain presenting to physical therapy settings in Saudi Arabia.

**Method:** A two-stage search strategy took place between 1 and 12 May 2025. Stage one systematically searched seven electronic databases—Scopus, MEDLINE, PubMed, Cochrane Library, CINAHL, ScienceDirect and PEDro, using predefined keywords and Boolean operators, to identify published literature on physical activity promotion for chronic musculoskeletal pain in physical therapy settings. Stage two targeted grey literature and unpublished sources, including the Saudi Ministry of Health website and the Saudi Physical Therapy Association websites, as well as Google and Google Scholar, to capture policy documents and practice guidelines. Two reviewers independently screened all records for eligibility based on predefined criteria. A single reviewer extracted data using a structured extraction tool to ensure consistency. Extracted data were organised and synthesised descriptively and thematically to map the scope of available evidence and highlight gaps in research and policy.

**Results:** Database searches identified 148 records; two peer-reviewed studies and one policy document met inclusion criteria. The studies—one qualitative and one quantitative—examined health promotion practices for chronic musculoskeletal conditions, including physical activity advice but not as the primary focus. Both reported that most physical therapists recognised the importance of physical activity, although prioritization varied: one found it inconsistently emphasized, while the other considered it a top priority in routine care. The quantitative study also reported frequency, noting advice was usually or always provided, though neither described its content or delivery Methods. The policy document outlined physical activity guidelines for health practitioners, with specific recommendations for osteoarthritis, including 30 minutes of light-to-moderate aerobic exercise three to four times weekly, daily stretching, and strengthening exercises, alongside strategies to manage pain and inflammation before activity.

**Conclusion:** This scoping review identified a substantial gap in research on integrating physical activity into physical therapy for chronic musculoskeletal pain in Saudi Arabia. The absence of robust evidence and specific guidelines limits consistent implementation in practice and raises questions about whether similar gaps exist in other

countries. Addressing this requires context-specific strategies that embed the promotion of physical activity as a core component of managing musculoskeletal pain, supported by clear protocols and training. Future work should prioritize collaborative research and stakeholder engagement to co-design interventions, inform policy, and advance evidence-based, patient-centered care.

### P-33

#### COMP<sup>3</sup>: Reaching consensus on how to measure chronic pain prevalence in populations

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**Background:** Chronic pain is a common cause of disability, poor quality of life, and health-care use across all ages. Despite this, it remains hard to answer a basic public health question: how many people live with chronic pain? Published estimates vary widely between studies, countries, and age groups, often by amounts that cannot reasonably be explained by real differences alone. Evidence from systematic reviews (1) shows that this variation is largely due to differences in how chronic pain is defined and measured in population studies. Differences in wording, recall periods, duration thresholds, and whether severity or impact are included make it difficult to compare Results and limit the value of prevalence data for policy and planning.

**Aim:** The COMP<sup>3</sup> (Consensus on Measuring Pain Prevalence in Populations) project Aims to agree a clear and consistent approach to

measuring chronic pain prevalence in population-based research. The Aim is to improve comparability of estimates across countries, cultures, age groups, and over time.

**Methods:** COMP<sup>3</sup> uses a structured consensus process involving an international, multidisciplinary panel with expertise in public health, epidemiology, pain medicine, psychology, rehabilitation, and health services research. The panel focuses on agreeing a small number of core concepts that underpin population measurement of chronic pain, including wording, recall period, duration, frequency, intensity, and impact. COMP<sup>3</sup> focuses on defining the minimum concepts needed for consistent epidemiological measurement. Patient and Public Involvement is included throughout via the International Association for the Study of Pain Global Alliance of Partners for Pain Advocacy, alongside explicit consideration of use across different cultures and across the life course, including in children and young people. It is intended that a draft set of questions will be available for consultation in March 2026.

**Results:** COMP<sup>3</sup> has established an international expert panel and agreed a shared set of core concepts for measuring chronic pain prevalence in populations. Using this framework, the project is developing a short, standardised question set of two to five items, designed specifically for use in population surveys and research studies. The question set is not intended for clinical assessment or diagnosis and does not replace detailed or condition-specific pain measures. Instead, it is designed to be brief, clear, and easy to use, so that it can be included in large-scale surveys, applied across different cultural settings, and used in studies covering a wide age range, including children and young people. The International Association for the Study of Pain has endorsed the process, and our intention is that the questions will be for use in a wide range of population-level research.

**Conclusion:** Differences in how chronic pain is measured are a major reason why prevalence estimates are difficult to compare and interpret. By agreeing a small set of core concepts and developing a brief, standardised question set for population research, COMP<sup>3</sup> Aims to improve the quality, comparability, and usefulness of chronic pain prevalence data for research, policy, and public health.

### Reference

1. Steingrimsdóttir et al (2017), *Defining chronic pain in epidemiological studies: a systematic review and meta-analysis*, Pain, 158: 2092–2107.

### P-35

#### Public and patient inclusion and engagement in developing causal models in UK biobank: Steps taken and lessons learnt

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**Background:** Public and patient inclusion and engagement ('PPIE') is widely recognised as a marker of high-quality health research. Defined by the NIHR as research conducted "with" or "by" members of the public, 'PPIE' may contribute across the research process, from shaping the development of grants and research questions through to disseminating findings. Meaningful 'PPIE' involvement enhances relevance, validity, and real-world impact by incorporating lived experience and aligning research with the needs of target populations.

Despite strong endorsement of 'PPIE', implementation remains inconsistent, with many studies reporting limited or absent involvement. Challenges are particularly evident in complex methodological research, where technical concepts may be perceived as barriers to 'PPIE' contribution. Whilst methodological guidance exists for 'PPIE' inclusion in areas including big data, health economics, and epidemiology, this does not extend to recommendations for integrating 'PPIE' into the development of causal methodologies, particularly directed acyclic graphs ('DAG's). Consideration of causal relationships is key to understanding which mechanisms are central in the experience of chronic pain and should be targeted in intervention design and development. The inclusion of 'PPIE' in the development of 'DAG' models has been identified as a crucial step to ensuring models are representative of lived experience, yet guidance and reflection on how to best integrate 'PPIE' into this process are yet to be developed.

**Aim:** This commentary was structured using the GRIPP 2 checklist to reflect on experiences of 'PPIE' within the Chronic High Impact Pain Project ('CHIPP'), a multi-centre project that developed 'DAG's using UK Biobank data. We describe 'PPIE' contributions to 'DAG' development and provide recommendations for integrating 'PPIE' into complex methodological research exploring key factors in chronic pain.

**Methods:** Guided by the GRIPP 2 checklist, members of the 'CHIPP' research team reflected on 'PPIE' involvement in the development of 'DAG's. These reflections synthesised two aspects of 'PPIE' in 'CHIPP'. First, a reflection and feedback workshop held with eleven 'PPIE' panel members who contributed to 'DAG' development, alongside five 'CHIPP' researchers who facilitated the sessions. 'CHIPP' 'PPIE' panel members were also invited to provide reflections via an anonymous survey, although this option was not taken. Second, at a one day writing retreat, a guided discussion between 'CHIPP' researchers around how and when 'PPIE' were included in work packages was held, guided by the feedback and reflections provided by the panel. Taken together, these provide well-rounded insight to build out recommendations for future research.

**Results:** Reflections from 'PPIE' panel members and researchers identified five key areas for improving 'PPIE' inclusion in complex methodological research. First, clear pre-session education strategies were considered essential to support understanding and enable meaningful contributions. Second, prioritising accessibility and clarity of language was crucial, even when lay terminology was used. Third, maintaining continuity and consistent contact between sessions was highlighted as important for consolidating learning and sustaining engagement. Fourth, panel members emphasised the value of dedicated 'PPIE' leadership by a team of researchers experienced in both the methodology and 'PPIE' education. Finally, sustaining relationships and methodological learning beyond time-limited projects was viewed as important for supporting ongoing confidence and capacity among 'PPIE' contributors.

**Conclusion:** This commentary demonstrates that meaningful 'PPIE' involvement in developing statistically complex methodologies, including 'DAG's, is both feasible and valuable within complex, data-intensive research. Reflections highlight practical strategies to enhance engagement in statistically complex Methods providing actionable recommendations to support more equitable and impactful 'PPIE' integration in causal and methodologically complex research.

## P-36

### The role of sacroiliac joint denervation for the management of lower back pain: Patient reported outcomes

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**Background:** Sacroiliac joint (SIJ) pain accounts for 40% of all lower back pain complaints. Treatment options include physiotherapy, pharmacological management or intra-articular steroid injections. However, these options often fail to provide long-term pain relief and lead to dependence on pharmacological management. Radiofrequency denervation is a minimally invasive technique that uses radiofrequency thermal energy to ablate sensory nerve fibres in the SIJ thus interrupting nociceptive signals.

**Aim:** We Aimed to assess the impact of SIJ radiofrequency denervation on patients in University Hospital of Wales, Cardiff. Primary outcomes assessed were pre- and post-treatment pain scores and the duration of therapeutic benefit among patients receiving SIJ radiofrequency denervation. Secondary outcome measures were to evaluate whether SIJ radiofrequency denervation treatment reduced analgesia use, improved patient mobility and impacted sleep.

**Methods:** Patients who received SIJ radiofrequency denervation between September 2024 to December 2025 were identified from Theatreman IT system. Patients identified were called by a single interviewer with a standardised 9-question survey over a single week period. Consent was gained for each participant before inclusion. Efficacy of treatment was evaluated by asking participants pain scores pre and post-denervation treatment. Patients were asked to rate pain intensity for each of these periods using the Numeric Rating Scale (with 0 being "no pain" and 10 being the "worst possible pain"). Pre-denervation pain scores were based on the month prior to treatment, whilst post-treatment scores were based on the period where patients felt benefit. Response to treatment was defined as a duration of greater than 3 weeks. Secondary outcomes were assessed by asking patients whether they were able to reduce analgesic medications and whether they felt improvement in activities of daily living and sleep following treatment.

**Results:** A total of 35 patients were identified as having SIJ radiofrequency denervation treatment. 25 patients were able to be contacted for completion of the survey. 10 were uncontactable during the 7-day period. 15 patients had bilateral SIJ radiofrequency denervation, and 10 patients received radiofrequency denervation unilaterally. The mean age of patients was 62 years; 64% (n = 16) of patients were female and 36% (n = 9) were male. The average pain score prior to radiofrequency denervation was 9, whilst the average post-treatment pain score was 5.2. 56% (n = 14) of patients reported a ≥50% reduction in their initial pain scores following treatment. 3 patients reported no change in pain scores, and 1 patient reported worsening of pain following treatment. In patients who reported a reduction in pain scores, the average duration of pain relief following treatment reported was 5 months and 6 days, with the shortest duration being 2 months and longest 10 months. 2 patients reported ongoing benefits of treatment at follow-up. Whilst pain largely improved, in patients who reported a reduction in pain scores, 30% of patients were able to reduce pain medications, whilst others continued pre-treatment regimes. 64% (n = 16) of patients reported improvements in activities of daily living and increased mobility however, only 36% (n = 9) reported improvements in sleep. Nonetheless, 76% of patients felt they had a positive impact and would recommend this treatment to others.

**Conclusion:** Benefits of radiofrequency denervation as a treatment for SIJ pain have been identified. Improvement in pain scores and a prolonged duration of a 'pain free' period for patients with chronic lower back pain can provide a significant impact to a person's physical and psychological health. Whilst dependence on pharmacological management could be improved, Results support SIJ radiofrequency denervation being a good treatment option.

## P-38

**Topical gabapentin for chronic pain: A single-centre service evaluation of patient-reported outcomes**

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**Background:** Gabagel is a trademarked formulation owned by the Special Production Unit at Cardiff and Vale University Hospital NHS Trust. Topical gabapentin formulations have been used off-label in chronic pain management, particularly for neuropathic pain, with the Aim of reducing systemic adverse effects associated with oral agents. However, evidence for effectiveness, functional impact, and tolerability in real-world clinical practice remains limited, with current literature largely comprising small studies and narrative reviews (1–3,5).

**Aim:** To evaluate patient-reported outcomes, tolerability, and functional impact of topical gabapentin use within a secondary-care pain service.

**Methods:** We developed a bespoke structured questionnaire to conduct this retrospective service evaluation following approval from the CAVUHB Audit management and tracking system. Questionnaire development underwent staged validation, review and refinement by a team including pain consultants, a pain trainee, and two pharmacists and a pharmacy student. A pilot version was trialled with patients attending the pain clinic to assess clarity, ease of completion, and face validity prior to final dissemination.

The questionnaire captured demographics, pain diagnosis and duration, concurrent oral and topical analgesic use, reasons for prescription, frequency of application, onset and duration of analgesic effect, impact on pain, daily activities, mood and sleep, and adverse effects.

Topical gabapentin (Gabagel™) developed in and sourced from the NHS St Mary's Pharmaceutical Unit, Cardiff is prescribed by pain consultants to suitable patients in CAVUHB. Validated questionnaires were sent to 40 patients. Responses were analysed descriptively.

**Results:** Response rate was 70% (n=28). Median age was 65.5 years, and median duration of pain was 7.71 years. Neuropathic pain was the most common indication in 64% (18/28). Other indications included low back pain and post-surgical pain (including knee, hernia, and neck surgery).

Only one patient reported no concurrent analgesic use, reflecting the complex polypharmacy typical of chronic neuropathic pain populations described in the literature (6). Ten patients used additional topical therapies, including lidocaine patches (n=5), ibuprofen gel (n=3), capsaicin cream (n=1), and topical carbamazepine (n=1). The most common reasons for prescription were lack of efficacy or intolerable side effects from previous oral treatments.

Seven patients discontinued topical gabapentin; due to lack of efficacy (n=3), supply issues (n=3), and inability to apply the gel following surgery at the site (n=1).

In terms of pain relief, 12/28 patients reported at least 50% pain relief while seven patients reported 10–40% improvement. Consistent with reports that topical agents may produce relatively rapid local effects (2), onset of analgesia occurred within 15 minutes (n=5) or within an hour (n=14) in our respondents. Pain relief duration varied from one hour (n=2), to four hours (n=15), to longer than four hours (n=4).

Although 19 patients reported some degree of pain relief, only 11 reported a positive impact on daily activities, mood, or sleep, highlighting the recognised discrepancy between pain intensity reduction and functional outcomes in chronic pain (6).

Adverse effects were uncommon. One patient reported a tolerable burning sensation at the application site, and one patient reported severe leg cramps that decreased on discontinuation, aligning with the generally favourable tolerability profile described for topical analgesics (1–3,4).

Free-text responses suggested that topical gabapentin gel may be more effective as part of a multimodal regimen and that repeated or regular application may be required before benefit is achieved.

**Conclusion:** Topical gabapentin can provide meaningful pain relief for a subset of patients, particularly neuropathic pain, with good tolerability. However, improvements in function, mood, and sleep were less consistent. These findings support topical gabapentin as a potential adjunctive option when systemic therapies are ineffective or poorly tolerated, while emphasising the need for realistic treatment goals and further prospective evaluation.

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## P-39

**Pre-emptive strategies for mitigating IPG site pain: Delayed post-implant activation at 4 weeks**

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**Introduction:** Although considered intrinsically safe, spinal cord stimulation (SCS), surgery related complications have been reported in literature (1,2,3,4). These include both device related (lead migration, hardware malfunction) and procedure related (Dural puncture, post-operative infection, pain, bleeding and very rarely nerve damage). Local pain/tenderness/ neuropathic sensations at the IPG site (0.9–50%) is one of the commonest procedure related complications that may also result in poor patient satisfaction and limited compliance of therapy (5). IPG-site pain remains a challenge and can result in failure of therapy despite adequate coverage of the

original pain. Persistence of the pain may mandate revision or even explanations in upto 7% of patients(7,8). Unsurprisingly, repeated procedures expose patients to further disability and indeed cost inefficiency. Although IPG-site pain can be managed conservatively with lidocaine patches, injections of neuroma or cushioning of hardware sites to some extent: pre-emptive mitigating measures have not been studied much. One of the factors causing nociplastic/neuropathic pain at IPG-site may be due to prolonged inflammation secondary to early charging related mechanical irritation or warming up during charging, which may result in neuronal hypersensitivity and pocket pain. We hypothesised that this can perhaps be minimised by delaying activation of IPG to 4 weeks with the hope to allowing adequate time for wound healing and avoiding irritation from early recharging.

**Methods:** To test this hypothesis, we started delayed activation of the device at 4 weeks postoperatively in contrast to usual 2-weeks of all rechargeable devices. In total, 46 patient's devices were activated at 4-weeks postoperatively. This was compared to control group of 47 patients, whose devices were activated at 2 weeks postoperatively from January 2024- January 2025. Both groups were followed up for 6 months post-operatively and compared for incidence of IPG-site pain and Mechanical factors like injury, infection, trauma, flipping or protrusion of the IPG, charging characteristics and recent h/o weight loss.

**Results:** Out of 46 delayed 4-weeks activation group patients: 3 patient reported IPG-site pain (6.52%) whilst in 2-week activation group: 7 patients reported IPG-site pain (14.89%) at 6 month follow up. There were no battery charging related issues in either group. All other patient's characteristics were comparable in both groups. Both groups had chargeable devices from Medtronic's, Boston Scientific, Abbotts, Nevro and Saluda assigned as per indication and patient suitability, no primary cell was included.

**Discussion:** We demonstrate that avoiding mechanical rubbing or occasional heating from early activation hence charging, significantly reduces IPG-site pain compared to controls. We did not observe any infection or delayed wound healing in the 4-weeks activation group. Allowing adequate time for the IPG pocket to heal before activation may help reduce sensitisation of the nerve endings by minimising inflammation and mechanical irritation.

This is our second project within the framework of pre-emptive measures to reduce IPG pocket pain. In our earlier study(9), we demonstrated reduction in the IPG-site pain by application of pre-emptive Lidocaine patches from 13% to 6.3% at the end of 6 months. Thus cost effectiveness and reduced outpatient burden favours the delayed activation strategy.

**Conclusion:** Delayed activation may be effective in preventing IPG-site pain and improve patient satisfaction, by reducing mechanical irritation and inflammation from recharging at early wound healing period.

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## P-40

### A retrospective study into the impact of spinal cord stimulation on medication use and healthcare utilisation in chronic neuropathic pain

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**Background:** Spinal cord stimulation (SCS) is a NICE recommended intervention available for select patients suffering from chronic neuropathic pain. Despite its recommendation since 2008, it remains underutilised in routine clinical practice.<sup>1,2</sup> In addition to its analgesic benefits, SCS can help reduce reliance on pharmacotherapy and can help decrease utilization of healthcare resources in the United Kingdom. This is of particular importance given the rise of opioid use, polypharmacy and the on-going pressure on the NHS.

**Aim:** This study Aimed to evaluate the impact of spinal cord stimulation on medication use, as well as assess the change in frequency of GP and hospital visits, before and after intervention.

**Methods:** A retrospective study was carried out using data from patients who underwent a permanent high-frequency SCS implantation at Royal Preston Hospital in the years between 2017 and 2023. Data from a total of 130 patients was included in this study. The outcomes were then assessed based on changes in opioid consumption, measured as morphine milligram equivalent (MME), number and dosage of non-opioid medications, and frequency of GP and hospital visits. The outcomes were compared at baseline, prior to intervention, and at three- and twelve-month periods post SCS implantation.

**Results:** Of the cohort studied, 70 patients were female and 60 were male, with an average age of 55.3 years (range 27-84 years). The cohort included multiple chronic pain diagnoses, with the majority of cases (90.7%) classified as persistent spinal pain syndrome type I (n=96) and type II (n=22). The remainder 9.3% made up injury induced pain (n=6), diabetic neuropathy (n=3), complex regional pain syndrome (n=2), malignancy associated pain (n=1) and iatrogenic causes (n=1).

Prior to the SCS, the mean MME dose was 72.5 mg/day (95% CI [59.6, 85.4]). At 3 months post-implant, mean MME decreased to 60.6 mg/day (95% CI [50.8, 70.3]) and again to 50.2 mg/day (95% CI [41.0, 59.4]) in 12 months post implantation, indicating an observed reduction in opioid consumption following the implant. In parallel, the mean total number of medications decreased from 2.4 per person (95% CI [2.2, 2.5]) prior to the implant, to 2.0 (95% CI [1.8, 2.2]) at 3 months post-implant, and further to 1.8 (95% CI [1.6, 2.0]) at 12 months. Showing a reduction in both the doses and the number of non-opiate medications and supporting the potential role of SCS in addressing the issue of polypharmacy.

Finally, a reduction in the number of hospital visits was also observed following the intervention. Patients attended hospital services an average of 8.2 times per year prior to implantation (95% CI [7.2, 9.2]). In the 12 months post-intervention, this decreased to 4.8 visits per year (95% CI [4.2, 5.3]).

**Conclusion:** These findings demonstrate the potential role of spinal cord stimulation in reducing polypharmacy burden and healthcare

resource utilisation in selected patients with refractory pain. Beyond offering meaningful relief to those living with chronic neuropathic pain, this intervention shows promise in reducing dependence on analgesic and opioid medication, contributing to overall improved patient outcomes.

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## P-41

### Music as an adjunct to reduce pain unpleasantness pre-intervention

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**Background:** Patients often experience significant anxiety and pain while awaiting peripheral nerve blocks as part of the anaesthetic technique for orthopaedic surgery. While anxiolytics are commonly used, they carry potential adverse effects, warranting the exploration of adjuncts and alternatives. Research suggests that music, particularly when it is perceived as pleasant, can effectively reduce both the intensity and the unpleasantness of pain. This study sought to determine if patient-preferred music could serve as a simple adjunct in the pre-procedural setting.

**Aim:** The Aim of this prospective cohort study was to evaluate the effect of patient-preferred music on pain unpleasantness in patients awaiting peripheral nerve blocks.

**Methods:** A prospective cohort of 8 orthopaedic patients (6 male, 2 female; age range 19-94) with acute fracture pain from trauma who were scheduled for peripheral nerve blocks was recruited. All patients spoke English and were transported to the induction room in preparation for the block. After intravenous access and routine monitoring were established, patients were explicitly consented and rated their current fracture pain unpleasantness using a Visual Analogue Scale (VAS). Following this initial assessment, participants were given headphones and allowed to listen to their preferred music for up to 10 minutes; choices included Coldplay, Bruce Springsteen, Luke Kelly, classical piano, and Frank Sinatra. After the music stopped, pain unpleasantness VAS was then reassessed. Peripheral nerve blocks were subsequently performed for various upper- and lower- limb orthopaedic procedures (mostly open reduction and internal fixation), followed by induction of general anaesthesia or positioning for spinal anaesthesia. Exclusion criteria were chronic pain, neuropsychiatric disorders, hearing impairment, history of alcohol or substance abuse, acute sedation (e.g., anxiolytics), and any deviation from standard clinical practice such as difficult cannulation.

**Results:** The intervention resulted in a statistically significant mean reduction in pain unpleasantness VAS score of 0.75 points (a 13.3% decrease;  $p = 0.02$ , 95% confidence interval range -1.34 to -0.16). The effect size was large (Cohen's  $d = -1.06$ ). Of the participants, 75% (6 out of 8) reported a decrease in pain unpleasantness, while none reported an increase.

**Conclusion:** Music is a readily available, simple, and low-cost adjunct that can reduce pain unpleasantness for patients awaiting peripheral nerve blocks. While traditional premedication can reduce anxiety and opioid consumption, its associated drawbacks - delirium, prolonged recovery, oversedation - can add insult to injury, especially in the elderly. Although our Results were statistically significant and showed a large effect size to suggest clinical meaningfulness, the small sample size necessitates a larger confirmatory study. Future work should Aim to replicate these promising findings and explore their application in other settings, such as procedures under local anaesthesia, neuraxial techniques alone, or conscious sedation.

## P-42

### "Highs and Lows", evolution of a singing group for people living with pain in Northeast England

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**Background:** The prevalence of high impact chronic pain is higher in Northeast England compared to the rest of the country [1]. Increased understanding of harms associated with pain medications [2] requires improved access to interdisciplinary approaches to pain management. Pain Management Programmes (PMP) have some evidence of benefit in terms of quality of life.[3] Few studies provide follow-up data beyond 12 months, and such resource intensive interventions are necessarily time limited. The idea for a singing group for people living with pain came from a desire to see the benefits from intensive group interventions like PMP sustained in the longer term. The Aim was to provide an opportunity to pursue a valued activity, in a social setting, with attention to pacing, and employment of other pain management strategies such as breathing exercises and mindfulness techniques.

The group meet for 1.5 hours weekly, at a Community Arts venue, facilitated by a qualified music therapist. There is no requirement for prior experience or music reading ability. Sessions begin with guided breathing exercises, and/or a mindfulness meditation. Time is built in to the session for refreshments and social interaction.

**Aim:** This qualitative service evaluation was conducted to assess the perceived benefits of the project to current participants and document its evolution.

**Methods:** A questionnaire was distributed to members, to identify characteristics of regular attenders, with free text opportunities for comment on individual experiences. Subsequently, a focus group discussion facilitated by RW and PR was recorded with consent and transcribed. Both authors coded the transcript independently to extract key themes.

**Results:** Four questionnaires were completed. The focus group discussion was attended by six participants. The questionnaire questions were about frequency of attendance and how people had heard of the group. Themes emerging from free text responses showed good correlation with focus group themes. As such both written and verbal material were combined in thematic analysis.

Five key themes were identified from transcripts. They were, in order of prominence;

- Emotional Wellbeing
- Social interaction

- Increasing Participation – potential strategies to broaden the scope of the group
- Pain Coping
- Benefits of breathing exercises/relaxation

The social element of the group is vital, and has led to the group rebranding themselves as a group for ‘Wellbeing, friendship, and Pain Management’, rather than pain having primacy in the description of the group’s purpose.

**Conclusion:** The group is valued highly by those who attend. The current members of the Highs and Lows see the impact of persistent pain as a broader difficulty faced by all people experiencing physical and mental health challenges. This is instructive to health professionals. Principles and practices of effective pain management may have broader applicability, and those who live with long term pain do not necessarily perceive themselves as a distinct population, rather as part of a larger group of people trying to live well despite health challenges of all kinds. Relaxation, valued activity and reduction in social isolation are seen as important for physical and mental health for everyone.

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## P-43

### Mesencephalotomy for the treatment of facial cancer pain: a systematic review of the literature

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**Background:** In a systematic review conducted by Snijders et al. (1), the prevalence of pain in oncologic patients was reported as 44.5%. This prevalence increases to 54.6% in patients with terminal, advanced, or metastatic cancer, and within this group, 40.7% experience moderate to severe pain (1). One of the ways this pain can manifest is in the orofacial region, an area innervated by the trigeminal nerve. For such cases, surgical interventions like the mesencephalotomy procedure, recommended only for terminal patients with unilateral upper body pain, may be considered.

The procedure mainly involves ablation of the spinothalamic and trigeminothalamic tracts and aims to stop the transmission of nociceptive signals to the thalamus, thereby providing analgesia. However, many physicians have abandoned this surgical intervention despite its satisfactory Results.

**Aim:** This study aims to analyze the risks, benefits, and efficacy of performing Mesencephalotomy in patients with unilateral facial pain secondary to cancer.

**Methods:** This study followed PRISMA guidelines and used the PubMed and “Biblioteca Virtual em Saúde” (BVS) databases. The PubMed search terms included “mesencephalotomy”, “mesencephalic tractotomy”, “rostral mesencephalic tractotomy,” and the paired terms “[ablation surgery] AND [trigeminal neuralgia]”. For the BVS database, the search term used was “mesencephalotomy”.

Articles in languages other than English, French, or German were excluded, as were duplicates and studies involving non-human subjects. The remaining papers were selected through a stepwise process: first by title, then by abstract, and finally, by full-text review. The risk of bias for included studies was assessed with the “Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I)” tool.

**Results:** In total six articles were included and they collectively reported on 19 patients, 13 males and 6 females (2-7). The mean patient age was approximately 55.3 years and the mean efficacy across studies was 90.3%, surpassing the general efficacy reported in the literature. Reported adverse effects included Parinaud’s syndrome, paresthesia, nystagmus, and dysesthesia in the left superior extremity (2-7).

The lesion parameters reported ranged from 65 to 80°C and 20 to 90 seconds. Procedures using higher temperatures and/or longer exposure times were more successful, whereas those using lower parameters were less effective and did not reduce the incidence of side effects (2-7).

**Conclusion:** Mesencephalotomy should be considered a viable approach to pain management in patients with facial pain secondary to malignant neoplasms. This intervention has the potential for broader application within the field of Palliative Care.

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## P-44

### A proposed pathway for integrated multidisciplinary pain management of neuropathic pain in foot and ankle surgical patients

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**Background:** The incidence of neuropathic pain is around 7-10% in common population. Neuropathic pain in foot ankle patients can be challenging to treat. This presence of neuropathic pain in pre-operative patients can make surgical decision making in this patient group more challenging to surgeons. (1)

Common treatments include pharmacological, medical pain management, capsaicin plaster applications, lidocaine patches, Acupuncture, TENS, alternate therapies, nutrition and Physiotherapy (2-4).

There is paucity of studies on the effectiveness of interventions such as physiotherapy, functional rehabilitation, acupuncture (5) in improving chronic neuropathic pain.

Neuropathic pain in foot and ankle patients is an area less researched and there is paucity of literature on incidence of this condition in surgical patients.

**Aim:** The Aim of this study was to evaluate the effectiveness of and integrated MDT pain management pathways for patients presenting with neuropathic pain of foot/ankle.

**Methods:** Patients who presented with neuropathic pain of the foot/ankle at surgical clinics were referred to an integrated pain management pathway. This pathway included detailed assessment of patients including S-LANNS score, functional abilities and gait prior to treatment. An AHP practitioner experienced in musculoskeletal PT management delivered treatment sessions for these patients. The treatment offered included a mix of below options: psychological reassurance, activity modification, TENS therapy, Acupuncture, Orthotic provision, soft tissue manipulation, de-sensitisation, functional tasks and gait training. This was done as a QI project registered with Newcastle Hospitals NHS Trust.

**Results:** A total number of 34 patients have been seen through this pathway between November 2024 and December 2025. Of this cohort, 21 patients had completed the pathway and 13 patients are continuing to have their treatment. All 21 patients were referred for neuropathic pain management. 4/21 (19.04%) received pharmacological therapy (Gabapentin or Pregabalin) along with physiotherapy. The average age of patients were 56.9 years; 14/21 (66.6%) were females. The average number of physio sessions offered were 4/patient. 19/21 (91.4%) of patients received Acupuncture, 16/21 desensitisation techniques (76.1%), 8/21 (38%) Acupuncture; 17/21 (80.9%) received exercises and functional training along with gait re-education. All patients received patient education about pain management and psychological reassurance. Following Physiotherapy, 4/21 patients (19.04%) were listed for surgery; 5/21 patients (23.8%) reported some improvement in symptoms; 7/21 (33.3%) progressed to self-management and were discharged, 5/21 (23.08%) reported no improvement. The average improvement in SLANNS score was from 21 to 16 (5 points).

**Conclusion:** Physiotherapy and functional rehabilitation are emerging treatment options to supplement medical pain management, therefore improving pain, function and quality of life in foot and ankle surgical patients presenting with neuropathic pain. Further research is required to establish the effectiveness of this treatment pathway in a larger patient population.

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## P-46

### The gender pain gap in desk-based work: How women and men experience and respond to musculoskeletal pain differently

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**Background:** Despite growing awareness of workplace musculoskeletal (MSK) disorders, the gendered nature of desk-related pain remains poorly quantified. Women report higher rates of MSK pain than men, yet workplace MSK interventions typically adopt gender-neutral approaches focused on equipment provision. Understanding not just whether women experience more pain, but where in the body, how it impacts work, and how pain varies across female life stages, is essential for developing effective, inclusive pain prevention strategies.

**Aim:** To quantify gender differences in MSK pain severity and prevalence among desk-based workers, identify body regions where the gender pain gap is largest, examine how pain varies across female life stages, and determine whether women and men experience different functional impacts at equivalent pain levels.

**Methods:** We analysed desk assessment data from 19,439 desk-based employees collected during 2025. Pain was measured using 0-10 numerical rating scales and body region mapping. Female life stages included menstruation, pregnancy, menopause, and new parenthood. Work impact was assessed through self-reported productivity, concentration, sleep disruption, healthcare-seeking, and absence. Ergonomic behaviour was assessed using overall desk scores (posture, habits, equipment use) versus setup scores (equipment availability only). Statistical analyses included t-tests, Mann-Whitney U tests, chi-square tests, and effect sizes. Comparisons were made at matched pain levels to distinguish pain frequency from impact and behavioural response patterns.

**Results:** Women reported significantly higher average pain than men (2.66 vs 1.93/10,  $p < 0.001$ , Cohen's  $d = 0.28$ ) and higher pain prevalence (58.66% vs 46.42%,  $\chi^2 = 351.16$ ,  $p < 0.001$ ). This pattern replicated 2024 findings, demonstrating temporal stability. The gender pain gap was most pronounced in upper-body regions: neck (40.42% vs 31.77%), right shoulder (22.22% vs 13.92%), left shoulder (18.02% vs 11.21%), and mid-back (22.11% vs 18.54%, all  $p < 0.001$ ). Within women, pain varied significantly by life stage. Menstruation was associated with highest pain (mean 5.59/10 when combined with abdominal pain,  $n = 27$ ), substantially exceeding pregnancy (2.58), menopause (2.76), and new parenthood (2.78), suggesting cyclical pain is layered onto everyday desk demands. When comparing women and men at identical pain levels, functional impact was broadly similar with important

nuances: at 1/10 pain, women were nearly twice as likely to seek healthcare (20.7% vs 11.6%); at 3/10, women reported more sleep disruption (23.8% vs 18.4%); at 5/10, men reported more productivity impact (25.7% vs 19.3%) while women reported more sleep disruption (45.9% vs 37.0%); at 10/10, women reported more domains impacted overall (3.32 vs 2.39) and substantially more concentration problems (61.6% vs 35.5%). Notably, women had marginally higher setup scores (61.63 vs 60.28,  $p < 0.01$ ), indicating equivalent or better equipment access, yet slightly lower overall desk scores (78.68 vs 79.88,  $p < 0.001$ ), suggesting the pain gap emerges from how equipment fits bodies and sustained posture duration, not equipment absence.

**Conclusion:** Women experience a persistent, gender pain gap in desk-based work that cannot be explained by equipment availability and appears related to body fit, sustained postural loading, and cyclical hormonal factors. For people living with pain, these findings emphasise that providing equipment is necessary but insufficient. Women need targeted behavioural interventions addressing sustained upper-body postures, movement variability throughout the workday, and menstrual-aware flexibility. Organisations should move beyond equipment checklists toward promoting frequent micro-breaks, posture variation, upper-body movement resets, and workplace cultures that normalise movement and menstrual symptom management. Gender-neutral approaches risk perpetuating systematic disadvantage for women workers experiencing preventable chronic pain.

#### P-47

##### Development of the COMPASS model of endometriosis: A Comprehensive Model of Pain encompassing Agency, Systemic factors and Sense making

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**Background:** Endometriosis affects approximately 10% of women worldwide [7]. Pain is a hallmark symptom of endometriosis, affecting up to 90% of individuals with the condition [2]. Pain is not only the most common symptom, but also the most impactful. Individuals with endometriosis-related pain experience significantly worse quality of life and mental health than those with nonpainful endometriosis [3,4]. Further individuals experiencing severe pain can incur productivity costs up to six times higher than those with minimal pain [1]. Recommended medical treatments for endometriosis-related pain have limited efficacy for pain relief [6]. Psychological interventions are effective in chronic pain but are currently limited for endometriosis [5]. This may be due to limited understanding of the psychological factors involved in the exacerbation and alleviation of endometriosis-related pain, that would form the targets for such interventions.

**Aim:** We sought to expand current understandings of endometriosis pain by investigating the factors that exacerbate and alleviate pain-related impact and distress, despite similar levels of pain severity.

**Method:** In this mixed-Methods study, 873 participants answered an online survey including pain outcomes. Sixteen participants were then purposively sampled for interview until theoretical saturation was reached, in line with grounded theory. The themes arising from the analysis of interview data formed a novel model of endometriosis pain. The model was then cross-validated and refined using content analysis of 841 open-ended online survey responses regarding system priorities for endometriosis care.

**Results:** The model proposes that despite the gendered nature of pain and invalidation being almost universally experienced, validation can be experienced, particularly through healthcare professionals who believe and listen to their patients. Validation fosters trust and is the platform from which agency and sense making can develop. Agency and sense making can be mutually reinforcing such that participating

in value-based rewarding activities and building an identity beyond endometriosis pain can facilitate acceptance. Together, these processes can culminate in reduced pain distress, impact, and burden, even in the face of high pain severity. These experiences can be further enhanced by broader systemic factors including more accessible care, improved treatment options, and more financial support.

**Conclusion:** Our findings present a novel model of endometriosis-related pain informed by mixed Methods Results from a large sample. These findings shed light on the complex nature of endometriosis pain experiences. The model provides several psychosocial treatment targets that could inform future psychological and multidisciplinary interventions for endometriosis-related pain.

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#### P-48

##### The impact of patient and public involvement (PPI) when designing research into autism and period pain

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**Background:** There is increasing evidence suggesting a link between neurodivergent conditions, such as autism, and experiences of chronic pain (1). Historically, autism was thought to be much more prevalent in males compared to females; however, recent evidence suggests that the male to female ratio is close to 3:1 (2). Despite this, females remain under-researched in the field of neurodivergent conditions.

Pain conditions related to the menstrual cycle such as dysmenorrhea (pain with menstruation), premenstrual syndrome, and endometriosis, are overrepresented in autistic females compared to rates in the general female population (3–5), but there is limited research investigating the experiences of autistic people living with menstrual related pain.

Sex assigned at birth and gender identity do not align for everyone. Within this project we use the term “female” to refer to a biological sex but refer to contributors and participants as “autistic people” to include all gender identities.

Participatory research Aims to work *with* individuals with lived experience, rather than to conduct research *to, on, or for* them (6). Historically, autistic people were rarely involved in research-related decision-making processes (7, 8), but there is now a growing movement towards autistic people being actively involved in research design and interpretation (9).

**Aim:** This project Aims to engage autistic people with period pain to help design research questions, create study documents and participation adverts, and to discuss views about payment preferences and ways in which we could make taking part more accessible for autistic people with period pain.

**Methods:** A PPI group was formed for this research project which included 5 autistic people with lived experience of period pain. The PPI group consisted of contributors with diverse Backgrounds (60% were formally diagnosed as autistic, 40% were self-diagnosed; 60% experienced moderate period pain, 40% experienced severe; 80% were white, 20% Asian / Asian British; 40% were aged between 16–20 years, 40% aged 21–24 years, 20% aged 30–35 years; 60% were cisgender, 20% reported their gender not aligning with their sex registered at birth, and 20% selected “prefer not to say”). PPI contributors were asked to review several study documents and were invited to an online meeting to feedback their thoughts.

**Results:** PPI contributors helped to shape this project and inform the direction of the research questions. Thanks to feedback from PPI contributors several adjustments to research design and study documents were made including: the use of inclusive and gender-neutral language / images across documents, providing clarifications about research terminology, providing suggestions about question format in the online survey, making modifications to study documents to aid readability, creating an information video to help participants understand the participant information sheet, informing participant payment preferences, and highlighting populations who should be considered for targeted recruitment to increase sample diversity.

**Conclusion:** It is important to engage PPI contributors with lived experience within pain research. This is especially important when research focusses on people living with neurodivergent conditions such as autism, as these groups have historically not been involved in research-related decision-making processes. Involving PPI contributors at the start of a project can provide important and transformative input to the design of the project and the accessibility of the research.

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## P-51

### Prioritising migraine prophylaxis in East London primary care

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**Background:** Migraine is a prevalent neurological disorder and a substantial contributor to disease burden in the UK. Despite advances in understanding its pathophysiology and the development of novel therapies, migraine continues to affect approximately 10 million individuals nationwide (1). Its societal impact is considerable, with an estimated three million workdays lost annually due to migraine-related absenteeism (1).

Yet, migraine remains underdiagnosed in primary care (2). Among those who are diagnosed, management typically begins with simple analgesics often in combination with triptans. Preventive therapy is generally reserved for patients whose symptoms significantly impair quality of life, with first-line prophylaxis commonly involving beta-blockers or antidepressants (3).

More recently, monoclonal antibodies (mAbs) targeting calcitonin gene-related peptide (CGRP) have been approved as a novel option for migraine prophylaxis. CGRP plays a key role in migraine pathophysiology, and its inhibition has demonstrated significant and sustained reductions in migraine frequency in clinical trials, including studies reporting efficacy over a 12-month follow-up period (4,5).

However, current eligibility criteria for CGRP monoclonal antibodies (CGRP mAbs) limit their effective use as migraine prophylaxis. Initiation is restricted to specialist care and requires at least four monthly migraine attacks and failure of three or more conventional preventive therapies.

**Aim:** This study evaluated migraine prophylaxis use within a primary care population in Newham, East London, UK

**Methods:** The EMIS Database was screened after obtaining local institutional approval for a diagnosis of chronic headache who presented more than twice to the primary care from 1 January 2024 to 31<sup>st</sup> December 2024. The exclusion criteria included:

- Age <18-year
- Suspected Idiopathic Intracranial Hypertension (IIH)
- Suspected low CSF pressure headache
- Any secondary headache
- Acute headache presentation
- Recent Advice and Guidance referrals
- Currently being seen in secondary care

**Results:** EMIS Database was screened after obtaining local institutional approval for a diagnosis of headache. 183 patients were shortlisted from the patient database at The Essex Lodge, Primary Care Practice. Patients were further filtered depending on whether they had received any imaging (CT, MRI, MRA) to aid diagnosis, and whether they had received medication for their problem. Of 183 patients shortlisted, 81 (44.3%) received either CT, MRI or MRA. 74 (40.4%) were on common headache medication use (Figure 1). 19 (10.4%) were on at least two migraine preventatives (Figure 2).

**Conclusion:** Newham, a borough in East London, is characterised by a young, highly multicultural population. Headache disorders represent a significant health burden not only across the wider UK population but disproportionately affect individuals living in low

### Common headache painkillers

- Paracetamol, 1g QDS
- Ibuprofen 400mg TDS
- Naproxen 500mg TDS
- Anadin
- Migralieve
- Solpadeine
- Sumatriptan tablet/spray/injection 50-100mg/10mg/6mg
- Rizatriptan 10mg
- Zolmitriptan 2.5-5mg
- Frovatriptan 2.5mg
- Naratriptan 2.5mg
- Almotriptan 12.5mg
- Eletriptan 20-40mg
- Cocodamol or codeine
- Tramadol

**Figure 1.** Common headache painkillers listed in community clinic criteria.

### Most common preventatives:

- Propranolol starts at 20mg, up to 80mg BD
- Candesartan: 4mg OD, up to 12mg BD,
- Amitriptyline: 10mg nocte, up to 50mg nocte
- Topiramate: 25mg OD, up to 50mg BD
- Flunarizine: 5mg OD, up to 10mg OD
- Valproate: 200mg OD, up to 400mg BD
- Venlafaxine 37.5mg OD, up to 75mg BD
- Pizotifen 0.5mg, up to 1.5mg BD

**Figure 2.** Migraine preventatives listed in community clinic criteria.

socioeconomic settings and people of colour—demographics that closely reflect Newham's population profile.

This should prompt increased efforts to simplify eligibility criteria for CGRP mAbs, particularly given their proven efficacy in migraine prophylaxis. Of 183 patients being diagnosed with chronic migraine, only 10.4% currently meet the eligibility criteria for CGRP mAb therapy. This highlights a substantial gap in access to effective treatment, the expansion of which could significantly improve patient quality of life.

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### P-52

#### Virtual group consultations for chronic pain management in primary care network in UK: A sustainable approach to providing high-quality care closer to home

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**Background:** Chronic pain affects approximately 15.5 million people in the United Kingdom and represents a major driver of primary care consultations, repeat prescribing, and onward referral to specialist services. It is estimated by the Health Foundation that chronic pain will be one of the long-term conditions contributing to observed health inequalities and projected to increase at a faster rate in the 10% most deprived areas by 2040. Most chronic pain is usually managed in primary care, underlining the need to invest in primary and community-based services and focus on prevention, empowerment/coaching and early intervention. Traditional one-to-one models of care are increasingly unsustainable and often fail to provide sufficient time for education, self-management support, and behaviour change.

Group consultations offer a promising, sustainable alternative—promoting lifestyle-based, team-delivered care that empowers self-management and improves access. They offer a potentially scalable and efficient approach to delivering biopsychosocial pain care within Primary Care Networks (PCNs).

**Aim:** To evaluate the feasibility, acceptability, and patient-reported outcomes of a structured virtual group consultation programme for people living with chronic pain delivered across a PCN in SE England.

**Methods:** A four-session virtual group consultation programme was delivered in 2025 across Pembroke and Reading Central PCNs. Over 2000 Patients with persistent non-cancer pain were identified using the EMIS primary care system and invited to participate in an initial virtual webinar (210) followed by a 4-session structured virtual group consultation programme. A final cohort of 15 patients attended three monthly online sessions with a digital app-based program offered to them between sessions and a final session 3 months later in June 2025. Each programme consisted of clinician-led education on contemporary pain science, medication optimisation, lifestyle factors, pacing, and self-management strategies, combined with facilitated group discussion/coaching. Outcome data were collected using post-programme feedback questionnaires assessing confidence, self-efficacy, healthcare utilisation, symptom impact, and perceived value of the group format. Descriptive analysis of quantitative data was undertaken, supplemented by qualitative free-text responses.

**Results:** A total of over 70% of invited patients completed the virtual group programme. Following completion, 55% of participants reported improved confidence and self-efficacy in self-managing their pain, while 80% reported increased use of pain self-management skills and strategies. Reduced reliance on pain medication was reported by 50% of participants, and 44% reported fewer general practitioner or specialist visits. Improvements in activities of daily living were reported by 66%, with 55% reporting better sleep, mood, or stress levels. Qualitative feedback highlighted the value of peer support, reduced isolation, improved understanding of pain mechanisms, and reassurance from shared experiences. Participants consistently described the virtual format as accessible and convenient.

**Conclusion:** Virtual group consultations for chronic pain within PCNs are feasible, acceptable to patients, and associated with meaningful improvements in confidence, self-management capability, and healthcare utilisation. By combining pain education with peer support and clinician facilitation, this model addresses key gaps in traditional care while making more efficient use of clinical time. These findings are important for people living with pain as they demonstrate a scalable approach that improves understanding, reduces dependency on medical services, and supports long-term self-management closer to home. Wider adoption of this model may contribute to more sustainable chronic pain care pathways in primary care.

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## P-53

### Exploring lived experiences and views on antidepressant treatment in chronic pain: A qualitative study (ELEVATE)

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**Background:** Chronic pain affects 30–50% of UK adults and is primarily managed in primary care. Antidepressants such as amitriptyline, duloxetine, and nortriptyline are widely recommended for chronic pain (NICE, 2021), yet evidence for their effectiveness remains uncertain (Birkinshaw et al., 2023). Little is known about patient experiences of using antidepressants for pain, which is crucial for shaping person-centred care.

**Aim:** To explore how adults with chronic pain understand, experience, and manage antidepressant treatment.

**Methods:** We conducted a qualitative study using semi-structured interviews (telephone/online) with 30 adults (≥18 years) who currently or previously used antidepressants primarily for chronic pain. Participants were recruited across the UK via social media, third-sector organisations, and snowball sampling. Data were analysed using reflexive thematic analysis with constant comparison across pain conditions and demographics.

## Results:

**Initial prescribing:** Participants felt that prescribing conversations with clinicians were limited by time constraints, resulting in brief or incomplete discussions. Many participants perceived that GPs lack knowledge about how antidepressants alleviate pain, although some explanations referenced benefits for pain, sleep, or mood and the expected timeframe for improvement. Side effects were rarely discussed.

Participants reported stigma related to clinician rationale for prescribing antidepressants for pain, with some questioning whether their pain was “real” or even misunderstood as depression. Explanations about neuropathic mechanisms occasionally reinforced this uncertainty, leaving some feeling their pain was invalidated. When explained well, participants perceived reduced stigma around antidepressant use. Participants valued clinicians who listened, explained uncertainties, and discussed alternatives.

**Mixed perceptions of impact:** Several participants described modest but meaningful improvements (particularly in sleep quality, pain-related anxiety, or general coping) rather than dramatic pain relief. Many questioned whether antidepressants genuinely reduced pain or simply made it “more tolerable.” Some reported only transient improvement before levelling off, while others experienced no benefit. Individuals often struggled to distinguish pain-related effects from mood and sleep-related effects leading to uncertainty about whether the antidepressants were ‘working for them’. Despite mixed perceptions, patients value antidepressants as an option that can be discussed for managing pain.

**Long-term use and discontinuation:** Participants experience a “drift” into long-term use with minimal follow-up, feeling “stuck” on medications started years earlier. Experiences of discontinuation were characterised by insufficient clinical support, fear of withdrawal, and anxiety about pain, sleep or mood worsening. Sedation, cognitive dulling, digestive problems, weight changes, and emotional blunting were common concerns. Participants described a trade-off between marginal symptom relief and side-effect burden, with some feeling they had little choice but to persevere. Others moved from an initial willingness to try anything to reduce pain at the start of their journeys, towards a degree of pain acceptance, preferring this over intolerable side effects.

**Conclusion:** Antidepressants remain central to chronic pain management, yet patient experiences reveal gaps in communication and monitoring. While some find these medicines helpful for pain, sleep,

and coping, many feel uncertain, poorly informed, or unsupported, especially when benefits are modest or when discontinuing treatment.

Our findings highlight the need for clearer information at initiation, and structured medication reviews in primary care. Tailored support for discontinuation is essential. Improving how antidepressants are initially discussed, prescribed, reviewed and discontinued could enhance safety, autonomy, and wellbeing for people living with chronic pain.

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## P-54

### Shared social identification as a predictor of pain outcomes and psychological flexibility in group-based pain management programmes

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**Background:** The National Institute for Health Care and Excellence (1) recommends group-based interventions for patients presenting with chronic primary pain, based on existing evidence for their effectiveness. Group-based pain management programmes are increasingly based on Acceptance and Commitment Therapy (ACT). However, attempts to understand how the group itself might impact both therapy processes and patient outcomes have been largely overlooked (2). Group processes are seen as fundamental to human wellbeing within the social psychological literature. The social identity approach (3) offers a well-established evidence-based theoretical framework for understanding possible relationships between feeling part of a group and a range of health-related outcomes, both at a community level and within psychologically informed therapy groups.

**Aim:** This study Aims to explore whether participants' subjective rating of shared social identification within pain management programmes can predict increased psychological flexibility (a core processes in ACT for pain) and key outcome measures including reduced depression, lower pain intensity and interference, and improved patient global impression of change (PGIC) following a pain management programme.

**Methods:** 461 patients completed self-report measures of shared social identification and outcome variables before and after taking part in a three-week ACT-based multidisciplinary residential pain management programme in a London hospital. Linear regression models controlled for age, gender, ethnicity and the pre-programme scores on the outcome measures. Regression models were run with bootstrapped bias corrected confidence intervals to account for skew in the data.

**Results:** Subjective shared social identification was high across the sample. On a scale ranging from 1 (not identifying at all with the group) to 7 (very much identifying) the average was 6.48, with 89% of patients scoring 6 or above. The data were negatively skewed, with very high levels of social identification amongst participants overall.

Regression analysis indicated that social identification was uniquely associated with post-treatment psychological flexibility ( $B = 0.11$ ,  $p = .006$ ). There was also a statistically significant relationship between social identification and the PGIC ( $B = -.22$ ,  $p < .001$ ). There were no other statistically significant relationships.

**Conclusions:** Participants strongly identified with their treatment group and the limited variability in social identification may have impacted the ability to detect significant relationships with pain outcomes. Although social identification was not significantly associated with depression, pain intensity, or interference, it was a significant predictor of psychological flexibility – a key process of change within the ACT approach, and with participants' subjective global impression of change during treatment. ACT does not Aim to reduce pain per se, but to support people to engage with behaviour change towards valued activities in the presence of pain and other aversive bodily sensations and emotions. Therefore, these Results are not completely surprising, and they highlight that feeling part of a group can itself be an important therapeutic component to be nurtured by facilitators of pain management programmes – rather than just a means for therapy delivery. Further research is needed to explore potential mediators and/or moderators of the relationship between social identification, psychological flexibility, and participant impression of change.

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## P-55

### Understanding pain in Parkinson's: the role of self-efficacy and catastrophising

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**Background:** Pain in Parkinson's requires urgent attention to better understand and manage it. Pain and Parkinson's should be viewed through a biopsychosocial framework however there is limited research focusing on the psychological predictors of pain and Parkinson's. Catastrophising and self-efficacy have been associated with higher pain severity in chronic pain conditions. However, to our knowledge self-efficacy has not been examined in people with Parkinson's (PwP) with pain.

**Aim:** To examine the associations between self-efficacy, pain catastrophising and pain severity in people with Parkinson's.

**Methods:** Participants from the 'Parkinson's Pain Study,' a nested study from the Tracking Parkinson's and Oxford Discovery cohort studies, were invited to take part in this follow up study (mean of  $8.7 \pm 0.7$  years disease duration). Pain was assessed using The King's Parkinson's Pain Scale (KPPS) and Short Form McGill Pain Questionnaire (MGPPQ). Participants also completed the Pain Self Efficacy Questionnaire (PSEQ) and Pain Catastrophizing Scale (PCS). Participant data on Parkinson's non-motor symptom severity, experiences of daily living and motor symptom severity (Movement Disorders Society Unified Parkinson's Disease Rating Scale; MDS-UPDRS Parts I-III) and quality of life (EQ-5D) were explored. Multiple linear regression models were used to determine whether self-efficacy and catastrophising were independently associated with pain severity measures, controlling for age, gender and disease duration.

**Results:** We recruited 111 PwP. We found that lower self-efficacy was significantly associated with greater pain as measured by the KPPS total score ( $\beta = -0.23$   $p \leq .001$ ,  $\Delta R^2 = 0.16$ ), and the MGPPQ total score ( $\beta = -0.68$   $p \leq .001$ ,  $\Delta R^2 = 0.16$ ). Lower self-efficacy was also significantly associated with increased sensory intensity (MGPPQ sensory  $\beta = -0.81$   $p \leq .001$ ,  $\Delta R^2 = 0.13$ ) and increased affective intensity (MGPPQ affective  $\beta = -1.75$   $p \leq .001$ ,  $\Delta R^2 = 0.2$ ). Greater catastrophising was significantly associated with greater total pain severity (KPPS total:  $\beta = 0.3$   $p \leq .001$ ,  $\Delta R^2 = 0.24$  and MGPPQ total:  $\beta = 0.96$   $p \leq .001$ ,

$\Delta R^2 = 0.39$ ), greater sensory dimension intensity (MGPPQ sensory  $\beta = 1.13$ ,  $p \leq .001$ ,  $\Delta R^2 = 0.30$ ) and affective dimension intensity (MGPPQ affective  $\beta = 2.48$   $p \leq .001$ ,  $\Delta R^2 = 0.33$ ).

**Conclusion:** Our findings suggest that self-efficacy and catastrophising are significantly associated with increased pain and increased sensory and affective intensity. Assessing self-efficacy and catastrophising may help identify PwP at higher risk of pain. Consideration of psychological factors, alongside clinical characteristics can support a more holistic approach to pain management for PwP. Future research should explore interventions aimed at these psychological factors to explore their impact on pain management in Parkinson's.

## P-56

### Beyond Pain: Unravelling worry, acceptance and wellbeing in chronic pain

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**Background:** Chronic pain affects 35–51% of UK adults and nearly one in five people worldwide and is a leading cause of disability and emotional distress. Yet biomedical models still prioritise pain intensity, despite ICD-11 recognising chronic pain as involving functional impairment and psychological distress alongside nociception. Positive psychology offers a broader framework, with Seligman's PERMA model capturing wellbeing as multidimensional and increasingly recommended in chronic pain care. Two cognitive-behavioural processes are also central to adjustment: pain acceptance, defined as continued engagement in valued activities despite pain, and pain-related worrying (historically catastrophising), a perseverative negative mental set linked to poorer outcomes. However, their simultaneous associations with PERMA wellbeing have not yet been examined.

**Aims:** This study sought to map the possible relationships between (1) pain experience, (2) pain acceptance, and (3) pain-related worrying and multidimensional wellbeing as defined by PERMA.

**Method:** A cross-sectional quantitative online survey recruited 104 adults, of whom 71 self-identified as living with chronic pain. Participants completed the Glasgow Pain Questionnaire (Thomas et al., 1996), PERMA Profiler (Butler & Kern, 2016), Pain Catastrophising Scale reframed as pain-related worrying (Sullivan et al., 1995), and Chronic Pain Acceptance Questionnaire-Revised (McCracken et al., 2004). Nine multiple linear regressions were conducted in the chronic pain group (one per PERMA domain), with Bonferroni correction applied to control family-wise error ( $\alpha = .005$ ). Directional hypotheses were withheld due to the exploratory nature of this work. Parallel analyses in the non-pain group yielded no significant models.

**Results:** Within the chronic pain group, all nine PERMA models were significant at the model level. Overall wellbeing was strongly predicted ( $F(10, 49) = 9.58$ ,  $p < .001$ ,  $R^2 = .66$ ), with Activity Engagement as the only significant predictor ( $t = 6.98$ ,  $p < .001$ ), while Magnification showed a trend-level association ( $t = -2.30$ ,  $p = .026$ ). Positive Emotion was also strongly predicted ( $F(10, 49) = 9.59$ ,  $p < .001$ ,  $R^2 = .66$ ), with Activity Engagement ( $t = 6.95$ ,  $p < .001$ ) and Magnification ( $t = -3.35$ ,  $p = .002$ ) significant, and Pain Willingness approaching significance ( $t = 2.22$ ,  $p = .031$ ). Activity Engagement was similarly the only significant predictor of Engagement ( $F(10, 49) = 4.90$ ,  $p < .001$ ,  $R^2 = .50$ ;  $t = 5.88$ ,  $p < .001$ ), Meaning and Accomplishment (both  $F(10, 49) = 6.11$ ,  $p < .001$ ,  $R^2 = .55$ ;  $t = 4.80$ ,  $p < .001$ ), and Health ( $F(10, 49) = 3.97$ ,  $p < .001$ ,  $R^2 = .48$ ;  $t = 5.26$ ,  $p < .001$ ). Trend-level associations were observed for Relationships ( $F(10, 49) = 4.20$ ,  $p < .001$ ,  $R^2 = .46$ ), including Activity Engagement ( $t = 2.89$ ,  $p = .006$ ) and pain frequency ( $t = -2.02$ ,  $p = .049$ ). Rumination approached significance for Negative Emotion ( $F(10, 49) = 5.02$ ,  $p < .001$ ,  $R^2 = .51$ ;  $t = 2.78$ ,  $p = .008$ ). Loneliness was significant at the model level ( $F(10, 49) = 2.29$ ,  $p = .027$ ,  $R^2 = .32$ ), with Inability to Cope approaching significance ( $t = 2.11$ ,  $p = .040$ ).

**Conclusion:** Overall, acceptance — particularly sustained activity engagement — may be more consequential for wellbeing than pain severity or frequency alone. Findings support multidimensional

wellbeing outcomes in chronic pain and reinforce calls for assessment frameworks that move beyond pain intensity toward person-centred indicators of living well with chronic pain.

**Keywords:** wellbeing, pain acceptance, pain-related worrying, pain experience

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## P-57

### Building links between local mental health services and a hospital based chronic pain management service -A collaboration initiative between the INPUT Pain Management Unit (offering pain management programmes - PMPs) and Lambeth Talking Therapies to improve local service provision for chronic pain patients by offering an integrated clinic

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**Background:** Chronic pain remains a major public health challenge (1). Data from the Lambeth Together partnership and its innovative chronic pain register highlight the scale of the issue locally: more than 28,000 Lambeth residents are living with chronic pain (2).

Over the past decade, NHS policy has emphasised integrating psychological therapies and physical healthcare, promoting co-location and collaboration. In turn, NHS Talking Therapies focused on people with long-term conditions (LTCs). Within Lambeth Talking Therapies (LTT) initiatives have included establishing a dedicated LTC team (3).

In 2024 INPUT and LTT began a collaboration aligned with the NHS Long Term Plan (4). This partnership reflects national priorities to shift care from hospital to community settings, to address inequalities, create integrated pathways, and to equip the workforce to meet complex needs.

**Aim:** After a secondment opportunity for a LTT CBT therapist to spend one day a week at the INPUT Unit (May 2024 to May 2025) the concept of a formal integrated clinic emerged. The clinic is based at INPUT and started June 2025. It is a rolling opportunity for LTT CBT therapists to provide a clinic for local chronic pain patients who could benefit from a pathway integrating both services. The purpose of the clinic is to establish links between community and hospital services, improve local pathways, and share expertise both ways.

**Methods:** The activities of the CBT therapist providing the integrated clinic were audited, including the number of patients referred for the clinic and the reasons for referral.

Qualitative data was collected on the impact of the integrated clinic on both the LTT team and the INPUT team – team members of both teams gave feedback

## Results

### Benefits:

#### Learning opportunities for CBT Therapist:

- Observing clinics and programmes
- Participating in psychology and audit meetings, case discussions
- Specialist clinical supervision

#### Benefits for Lambeth Talking Therapies:

- In depth case discussions of clients with chronic pain, supporting clinicians in identifying PMP suitability and facilitating appropriate referrals
- Increased awareness of INPUT and pain management services
- Learning about Acceptance and Commitment Therapy (ACT), with skills and resources shared via monthly LTC peer supervision

#### Benefits for INPUT:

- Improved awareness of local mental health services and referral pathways
- Provision of resources and information to support appropriate referrals to mental health services if needed.
- Provision of individual therapy for LTT patients who need psychological support before they can be considered for a PMP or after completing a PMP to consolidate the skills they learned.

Following over 15 case consultations, 7 referrals were made to the clinic in the first 6 months (3 via INPUT, 3 via LTT and 1 joint). 4 were referred with the purpose of preparing for a PMP, whilst 3 were for consolidation of pain management skills after PMP.

## Challenges:

The scope of the clinic (one day a week) is limited, so direct therapy through the integrated clinic can only be offered to a small number of patients

**Conclusion:** Following the successful introduction of the integrated clinic the plan is to develop it and to share the concept with other services. As funding is raised through clinical activity it is a cost-effective way of co-operating. Skills and expertise are shared, which benefits clinicians of both teams.

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## P-58

**Development, evolution, evaluation & core insights from a ward-based intravenous lidocaine for fibromyalgia at a UK district general hospital**

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**Background:** Intravenous (IV) lidocaine is increasingly used in patients with refractory fibromyalgia and chronic widespread pain. However, there is no UK guidance on optimal delivery models, dosing, or monitoring outside theatre environments. During the COVID-19 pandemic, The Hillingdon Hospital inherited a backlog of over 1,000 patients awaiting IV lidocaine. Access to a monitored ward space enabled rapid service redesign, high-volume delivery, and consultant-led supervision, while preserving theatre capacity.

**Methods:** Between September 2020 and October 2025, IV lidocaine infusions were delivered under continuous physiological monitoring. Over 90% of infusions were administered at a standard dose of 5 mg/kg (maximum 500 mg). Service delivery occurred across three consultant-led pathways:

- **Consultant 1:** 404 infusion episodes (207 repeat infusions), routine pre-infusion micronutrient assessment and correction
- **Consultant 2:** 289 infusion episodes (112 repeat infusions), no routine biochemical screening, structured three-infusion courses
- **Consultant 3:** 17 single-infusion cases

Importantly, the service did not include a formal multidisciplinary programme—no psychology, physiotherapy, or structured lifestyle interventions were provided—allowing observational assessment of the isolated pharmacological effect.

A retrospective audit assessed total infusion numbers, complications, and outcome documentation. Repeat infusions were used as a pragmatic proxy for perceived clinical benefit. Observations informed service standardisation, including the development of a structured auto-fill follow-up proforma capturing patient-reported outcomes across pain, sleep, cognition, function, and analgesic use.

**Results:** Over the 5 years more than 600 patients received ward-based IV lidocaine infusions with no major complications. Repeat infusions were more frequent among patients who underwent routine micronutrient optimisation (207/404 episodes, 51%) than among those without routine testing (112/289 episodes, 39%). Ward-based delivery reduced waiting times, improved efficiency, and preserved theatre capacity for interventional procedures. The structured follow-up proforma improved completeness and consistency of outcome documentation, will enable longitudinal comparison between patients, and informed repeat infusion decisions.

**Recommendations:** Based upon Results we found, in January 2026 a prospective audit was initiated to follow 75 consecutive patients over an 18-month period. Predefined responder criteria include a ≥50% reduction in pain or a clinically meaningful improvement in function lasting at least 10 weeks. Patients will be reviewed at 1, 3, 6, 12, and 18 months to systematically assess treatment durability and overall service effectiveness.

**Conclusions:** Ward-based IV lidocaine delivery is safe, efficient, and scalable. Observational evaluation demonstrates that micronutrient optimisation and structured follow-up may improve perceived treatment benefit and durability. By isolating the pharmacological effect, this service clarifies the real-world role of IV lidocaine and provides a transferable framework for UK fibromyalgia pathways, supporting

timely, safe, and evidence-informed care outside theatre environments. The ongoing prospective audit of 75 patients over 18 months will generate systematic data to further inform future clinical pathways.

## P-59

**Transitional pain clinic – an evolving service**

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**Background:** Initially, Transitional Pain Services were established for patients who met specific criteria based on associated risk factors before their elective surgery (Katz et al 2015). However, in the current NHS climate, many patients experience unplanned long and complex hospital admissions, often requiring the expertise of an inpatient pain service. In a busy trauma centre with a high volume of emergency department (ED) cases, the need for a transitional pain clinic is crucial to ensure that patients are not discharged with inadequate pain management or support.

The demand for our Transitional Pain Clinic (TPC) has expanded to include non-elective patients, providing them with pain education and stewardship for opioids and gabapentinoids (Simpson et al. 2023).

This approach helps foster stronger collaboration between hospital services and community-based care, including GP services.

**Aims:** The Aim of this project is to examine the evolving changes and growing demand for pain services. The authors have expanded the scope of the waiting list of this clinic to include non-elective patients, allowing them to review patients in our Transitional Pain Clinic (TPC) after discharge from hospital.

**Methods:** Quantitative data was collected by the pain nurses during their routine ward rounds. The primary objective was to identify patients who required follow-up care and support after discharge. This process was carried out through a comprehensive assessment by the pain nurses, which included reviewing the patient's medical history, associated risk factors and clinical evaluation. Based on the assessment, patients were offered the option of a telephone follow-up appointment post-discharge.

Patients who consented to the telephone appointment were subsequently contacted via text message to confirm the details of their scheduled appointment.

We collected demographic information, mode of admission, risk factors such as mental health problems, known to chronic pain clinics, opioid use prior to admission. In addition to these, specialty of care; reason for referral and for offering an appointment.

**Results:** As part of the Transitional pain clinic, pain nurses maintain records of patient referrals originating from various sources: pre-assessment (n=65), elective ward (n=53), the elective surgical monitored unit (n=13), anaesthetists (n=4), and non-elective patients (n=25). Starting in Summer 2025, they introduced telephone appointments for non-elective referrals.

The patients come from a diverse of specialties, trauma, orthopaedics; gynaecology; general surgery; medical admissions and neurosurgery. The reason for referral to our transitional clinic included pain management support, management of high opioid requirement, complex admission following multiple surgeries; and polytrauma admissions. Some of the patients met the criteria associated with risk of developing chronic pain or continued use of opioid, and for this reason we offer the appointment to our nurse-led clinic. Furthermore, we identified that these patients would benefit from pain education

and signposting of appropriate services such as a chronic pain clinic if needed, following discharge.

**Conclusions:** Access to TPC clinic has been successfully expanded to include non-elective patients, this service ensures that some continuity of care is maintained following a patient discharge from hospital and into the GP's care. The telephone appointment supports opioid stewardship, facilitates pain education and a practical approach to pain management after discharge. We acknowledge this service is likely to expand further in our hospital and possible outpatient pain services.

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## P-60

### How involved should pain services be in the transition phase of young sickle cell patients to adult services?

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**Background:** Sickle cell disease (SCD) continues to be a condition which is poorly managed in hospital settings. For young people this experience brings additional layers potentially impacting education and social life (Renedo et al. 2020).

The transition process for young people with SCD is complicated by inadequate care in non-specialist settings, such as Accident & Emergency (A&E) departments and general hospital wards. Young patients aged 16-20 report worse experiences with their care compared to other age groups (Chakravorty et al., 2018).

In the UK, the transition from paediatric to adult care typically begins at a young age 12-13 years of age and is intended to continue until the patient is 25 (NICE, 2016). However, this process is often hindered by various factors, including young people's negative experiences with the healthcare system. One significant issue is the stigma and stereotypes surrounding SCD patients, particularly the misconception of them being "drug seekers," which leads to inadequate pain management (Renedo et al., 2020).

**Aims:** The purpose of this survey is to gather insights from experienced professionals, including clinical nurse specialists (CNS), consultant haematologists, and pain management consultants, regarding the delivery of high-quality care for young adults during their transition phase. Additionally, the author Aims to initiate a discussion among readers about the most effective approaches to pain management for this patient group.

**Methods:** This qualitative survey was designed to gather insights from consultants and CNS in both pain management and SCD regarding best practices for managing pain in young adults with SCD. The survey questions were developed collaboratively by the lead nurses from both specialisms. We asked 5 questions designed to obtain views on a role for a specialist sickle pain service, the benefits and challenges of providing young adults with a transitioning sickle pain service. We also asked participants on their views on opioid stewardship and their practices. Additionally, we asked for their views on when a pain service is needed and their understanding of chronic pain in patients with SCD.

**Results:** We received responses from a range of specialities including a transition nurse, CNS from paediatrics and adult (pain and SCD services), and consultants in both fields.

The main themes included acknowledgement of the need for a specialist sickle pain service providing consistent pain management input and reduce variations in care.

The benefits noted were, early identification of complex pain and continuity of care. Some of the challenges reported by the participants were resources, experience and expertise. Also mentioned as a challenge is young patient disengagement.

Participants had similar views on opioid stewardship practices, most participants agreed on using opioids in a safe manner and looking at escalation as well as de-escalation of these. Participants also recognise the risk of continued use of opioids.

**Conclusion:** The Results from the findings indicate the desire for joint collaborative working with both specialities, for complex pain presentations. All participants agree on the benefits of offering support, education and individualise pain management plans to young transitioning patients, as these would provide them with consistent care.

There is shared understanding of chronic pain in this group of patients and there is acknowledgment of chronic pain requiring a holistic approach. The result of this qualitative survey also highlights the need for a dedicated sickle pain service which includes specialist pain physiotherapy and psychology.

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## P-61

### National joint cardiology and neuromodulation multidisciplinary service for refractory angina or chest pain management

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**Introduction:** Refractory angina (RA) is defined as the occurrence of frequent angina attacks uncontrolled by optimal drug therapy, significantly limiting the patient's daily activities, with the presence of coronary artery disease rendering percutaneous coronary intervention or bypass surgery unsuitable.<sup>1</sup> The European Society of Cardiology estimates RA being 15% of total angina presentations with an annual incidence of 30,000-50,000. A recent study reported that over 70% of those patients are expected to survive 9 years following diagnosis.<sup>2</sup> Likewise, these patients were shown to have increased hospitalisation rates comparing to myocardial infarction/mortality.<sup>3</sup>

In UK, the RA management is underprovided due to limited specialist care provision. Consequently, patients commonly end up in a perpetual cycle of frequent local reviews alternating between outpatient clinics, A&E attendance and hospital admissions - incurring significant financial burden. With the increasing prevalence of RA and the introduction of novel therapeutics (spinal cord stimulation, coronary sinus reducer and research into cell and gene-based therapies), we have established the UK's only joint cardiology-neuromodulation pain multidisciplinary team (MDT) service that offers access to these new pathways and treatments to this group of patients.

**Methodology:** The MDT (attended by interventional cardiologists and anaesthetists specialising in pain management) runs virtually once a month that follows a set pathway (fig 1) and accepts national referrals. All RA patients are screened before being presented to the MDT (inclusion criteria: 18-85 years, diagnosis of refractory angina, CCS >III despite optimal medical and device therapy, no revascularisation options).

At the MDT, the patients are stratified to the new treatment's algorithm depending on their suitability for innovative stem cell therapy, an innovative approach Aimed at promoting angiogenesis and improving myocardial perfusion (REGENERATE COBRA trial<sup>4</sup>) followed by spinal cord stimulation (SCS) or SCS therapy (TA159)<sup>5</sup>. All data are collected, and clinical outcomes recorded.

## Results:

- **Nurturing Innovation and collaboration:** The joint MDT has cultivated expertise and delivery of innovation in the territory of unmet need. As a result, a cross speciality multi-disciplinary team exists today that works collaboratively linking key stakeholders (clinical and academia) to nurture spinal cord stimulation and other innovative therapies as part of RA MDT service.

- **Patient Benefit:** Since 2022-25, 57 patients have been assessed in the MDT. All patients are currently on the research trial or clinical pathways for the long-term outcome data collection (cardiovascular and pain health quality of life outcomes).

Following spinal cord stimulation (SCS) therapy (6-12 months), patients underwent NM PET perfusion scans to assess the effects of SCS on myocardial perfusion, with the Aim of demonstrating its impact on myocardial perfusion.

**Conclusion:** This is a unique national MDT offers innovative treatments to these refractory angina patients with the Aim of improving their symptoms and quality of life to reduce the healthcare burden on the NHS through reduced outpatient appointments, A&E attendance and inpatient stays. Additionally, we hope to generate objective evidence of SCS therapy through perfusion scans.