The Evolving Landscape of Fibromyalgia Clinical Trials:

Safety, Efficacy, and Regulatory Considerations

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Introduction

Fibromyalgia, a chronic and multifaceted pain disorder, affects millions worldwide, presenting significant challenges in diagnosis, management, and treatment development.

Characterized by widespread musculoskeletal pain, fatigue, cognitive impairments, and sleep disturbances, fibromyalgia has long been recognized as a central nervous system disorder. Despite advancements in understanding its pathophysiology, including the roles of central sensitization and neurotransmitter imbalances, its precise etiology remains elusive.

This whitepaper explores the latest developments in fibromyalgia research, emphasizing diagnostic criteria, prevalence, and therapeutic advancements. It highlights critical unmet needs, including effective treatment strategies and equitable access to care, while offering a comprehensive overview of clinical trial outcomes, safety considerations, and market trends. By addressing these facets, this document aims to contribute to the ongoing discourse, fostering innovation and improved outcomes for individuals living with fibromyalgia.

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Overview of Fibromyalgia

Key Characteristics of Fibromyalgia

- **Chronic Pain:** Persistent pain lasting more than three months, widespread across the body.
- **Fatigue:** Profound exhaustion that interferes with daily life and does not improve with rest.
- **Cognitive Issues:** Commonly known as "fibro fog," including memory lapses and difficulty concentrating.
- **Sleep Disturbances:** Poor sleep quality, often associated with restless leg syndrome or sleep apnea.
- **Comorbid Conditions:** Commonly co-occurs with irritable bowel syndrome (IBS), migraines, and depression.

Historical Perspective and Evolution of Understanding

Fibromyalgia was first described in the early 1900s, initially referred to as "fibrositis." Over time, the understanding evolved from viewing it as an inflammatory condition to recognizing it as a central nervous system disorder. The 1990 American College of Rheumatology (ACR) criteria were pivotal in standardizing diagnosis based on tender points. In 2010, diagnostic guidelines expanded to include widespread pain and symptom severity, reflecting a broader understanding of its systemic nature.

Contributing Factors

Biological Factors

1. Central Sensitization: Amplified neural responses in the central nervous system enhance pain perception.
2. Neurotransmitter Imbalances: Abnormal levels of serotonin, dopamine, and norepinephrine contribute to pain and mood dysregulation.
3. Genetics: A familial predisposition suggests a genetic component, with polymorphisms in pain-processing genes noted.

Psychological Factors

1. Stress: Chronic stress can exacerbate symptoms, with significant overlap with anxiety and depression.
2. Emotional Trauma: Past trauma, particularly in childhood, is a recognized risk factor.
3. Cognitive Beliefs: Negative pain-related beliefs can perpetuate a cycle of chronic pain and disability.

Environmental Factors

1. Lifestyle: Sedentary behavior and poor diet can worsen symptoms.
2. Weather Sensitivity: Changes in temperature and humidity are reported triggers.
3. Occupational Hazards: Physically or emotionally demanding jobs may increase symptom onset risk.

Insights on Fibromyalgia

Statistics and Prevalence

- **Global Prevalence:** Estimated 2-4% of the population, with higher rates in women (70-90% of cases).
- **Historical Trend Analysis (2013-2023):** A steady increase in diagnosis due to improved awareness, with prevalence growing approximately 2-3% annually.
- **Future Projections:** Expected to rise by 10-15% over the next decade due to aging populations and heightened recognition of central pain syndromes.

Advancements in Research

Recent breakthroughs have focused on neuroimaging, identifying aberrant brain activity in fibromyalgia patients. Emerging biomarkers, such as cytokine profiles, are under investigation. Novel therapies, including neuromodulation techniques and microRNA research, are gaining traction.

Market Overview

The fibromyalgia treatment market is valued at approximately USD 2 billion globally, with an expected CAGR of 4.2% by 2030. Growth drivers include the development of non-opioid treatments and increased demand for personalized medicine.

Top Drugs by Market Potential

Drug Name	Manufacturer	Market Share (%)	Earning Potential (USD Million)
Lyrica (Pregabalin)	Pfizer	40%	$800M
Cymbalta (Duloxetine)	Eli Lilly	30%	$600M
Savella (Milnacipran)	AbbVie	20%	$400M
Gabapentin	Generic	5%	$100M
Amitriptyline	Generic	5%	$100M

ICD-11 Code and Diagnostic Criteria

ICD-11 Code: MG30.01

Diagnostic Criteria

1. Chronic widespread pain for at least three months.
2. Symptoms such as fatigue, unrefreshing sleep, and cognitive impairment.
3. Symptoms are not better explained by another condition.
4. Pain occurs in at least four out of five regions defined in the 2019 ACR criteria.

Evolution of Diagnostic Criteria

The diagnostic criteria for fibromyalgia have evolved from a tender-point-based approach in the 1990 American College of Rheumatology (ACR) guidelines to more inclusive symptom-focused criteria introduced in 2010. These updates incorporated tools like the Widespread Pain Index (WPI) and Symptom Severity Scale (SSS), enabling a broader and more accurate assessment of the condition. By 2016, refinements included cognitive and sleep-related symptoms, ensuring the criteria captured the systemic and multifaceted nature of fibromyalgia.

Impact on Clinical and Research Perspectives

The transition to symptom-based criteria has improved clinical accessibility and early diagnosis, benefiting patients who previously may not have met the tender-point threshold. In research, this evolution has allowed for a more diverse and representative patient population in clinical trials, enhancing the understanding of fibromyalgia's variability. These changes have bridged gaps between clinical practice and research, advancing both therapeutic strategies and biomarker discovery for fibromyalgia.

Epidemiology of Fibromyalgia

Global Prevalence

Fibromyalgia affects an estimated 2-4% of the global population, making it one of the most common chronic pain disorders. Prevalence rates vary by region, with higher diagnosis rates in developed countries due to better awareness, healthcare access, and diagnostic tools. In lower-income regions, underdiagnosis and misclassification are prevalent, likely stemming from limited healthcare infrastructure and cultural stigmas associated with chronic pain disorders.

Prevalence by Age

Fibromyalgia is most frequently diagnosed in individuals between 30 and 50 years of age, coinciding with the peak productive years of adulthood. However, the condition is increasingly recognized in adolescents, potentially linked to rising stress levels and earlier exposure to triggering factors such as trauma. Among older adults, fibromyalgia may overlap with aging-related conditions, contributing to increased prevalence in populations over 60 years.

Prevalence by Gender

Women account for 70-90% of fibromyalgia cases, a disparity that is thought to be influenced by hormonal differences and heightened sensitivity to pain stimuli. Fluctuations in estrogen levels, such as those occurring during menstrual cycles, pregnancy, and menopause, are believed to exacerbate symptoms. While fibromyalgia occurs in men, it is often underdiagnosed due to gender differences in reporting pain and healthcare-seeking behaviors.

Prevalence by Race and Ethnicity

While fibromyalgia appears to affect all racial and ethnic groups similarly, diagnosis rates tend to be lower in minority populations. Socioeconomic barriers, limited access to specialized care, and cultural attitudes toward pain contribute to disparities in diagnosis and treatment. Research has highlighted the need for greater awareness and equitable diagnostic practices in underrepresented communities to address these gaps.

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Pivotal Endpoints for Fibromyalgia Clinical Trials

1. Pain Reduction

- Directly correlates with improved quality of life.

Challenge:

- Pain is inherently subjective, varying across individuals, and is influenced by psychological factors such as mood or stress. Clinical trials often rely on patient-reported outcomes, which may lack consistency and precision.

Solution:

- Implement validated, standardized pain scales such as the Visual Analog Scale (VAS) and integrate digital tools like wearable devices to monitor pain objectively over time. These tools provide continuous data and help minimize reporting bias.

2. Sleep Quality

- Enhances overall health and symptom management.

Challenge:

- Measuring sleep quality objectively is difficult due to variability in sleep patterns and the subjective nature of self-reported outcomes. Additionally, co-occurring conditions like sleep apnea can complicate results.

Solution:

- Use polysomnography for objective sleep measurements and combine it with validated sleep questionnaires like the Pittsburgh Sleep Quality Index to account for subjective experiences. Advanced actigraphy can also be used for RWD collection.

3. Fatigue Levels

- Reduction correlates with improved daily functionality.

Challenge:

- Fatigue is multifaceted and influenced by psychological, physical, and social factors, making it challenging to isolate as a primary outcome. Standardized tools may fail to capture its complexity.

Solution:

- Employ multidimensional fatigue scales, such as the Multidimensional Fatigue Inventory (MFI), to evaluate different aspects of fatigue comprehensively. Combining this with patient diaries can provide real-world insights into fluctuations in fatigue levels.

4. Cognitive Function

- Improvement leads to better productivity and lifestyle.

Challenge:

- Cognitive dysfunction, often described as "fibro fog," lacks standardized biomarkers, and subjective patient reports are prone to variability. Additionally, many patients struggle to articulate cognitive symptoms.

Solution:

- Utilize validated neuropsychological testing protocols, such as the Trail Making Test (TMT) or computerized cognitive assessments, to measure specific cognitive domains. Incorporating digital tools for real-time cognitive tracking may also improve accuracy.

Three Most Commonly Prescribed Drugs for Fibromyalgia

Drug Name	Year of Approval	Sponsor	Mechanism of Action	Therapeutic Effects
Lyrica (Pregabalin)	2004	Pfizer	Modulates voltage-gated calcium channels in neurons, reducing the release of excitatory neurotransmitters such as glutamate and substance P. This dampens hyperactive neural circuits involved in pain signaling.	Provides significant pain relief by reducing the heightened nerve activity associated with fibromyalgia. Also improves sleep quality and helps with anxiety symptoms often associated with the condition.
Savella (Milnacipran)	2009	AbbVie	Functions as a serotonin-norepinephrine reuptake inhibitor (SNRI), with a higher affinity for norepinephrine. It adjusts the brain's response to pain stimuli by improving neurotransmitter balance.	Reduces fibromyalgia-related pain and fatigue. Also enhances energy levels and daily functioning, making it particularly useful for patients struggling with lethargy.
Neurontin (Gabapentin)	1993	Pfizer	Neurontin modulates the activity of voltage-gated calcium channels by binding to the alpha-2-delta subunit, reducing the release of excitatory neurotransmitters involved in pain signaling and seizures.	Provides significant pain relief by modulating neural activity associated with neuropathic pain. Also effective as an adjunctive therapy in the treatment of partial seizures.

Pivotal Clinical Trials Leading to FDA Approval

Drug Name	Study Name/ Clinical Trial Identifier	Sample Size	Key Findings and Statistical Data
Lyrica (Pregabalin)	NCT00156933	529	The trial demonstrated significant reductions in pain intensity, with 50% of patients reporting a ≥30% reduction in pain ($p < 0.001$). Additionally, improvements in sleep quality were observed, with secondary outcomes indicating enhanced daily functionality.
Cymbalta (Duloxetine)	NCT00222995	604	Patients experienced significant pain relief, with a mean reduction in the Brief Pain Inventory (BPI) scores by 2.4 points compared to 1.4 points for placebo ($p < 0.05$). Improvement in depressive symptoms, as measured by the Hamilton Depression Scale, was also noted. *Important Note: Eli Lilly, the manufacturer of Cymbalta, has announced the discontinuation of the brand-name version of this medication. This decision is due to the detection of an impurity, N-nitroso-duloxetine, which exceeds recommended limits and may increase cancer risk over prolonged exposure.*
Savella (Milnacipran)	NCT00482662	884	The study showed a 57% improvement in global symptom relief based on the Patient Global Impression of Change (PGIC) scale, compared to 33% for placebo ($p < 0.01$). Additionally, fatigue levels were reduced significantly, enhancing overall patient well-being.
Neurontin (Gabapentin)	NCT00005564	150	The trial demonstrated a 40% reduction in pain severity in comparison to placebo ($p < 0.05$). Secondary outcomes showed improved sleep patterns and better tolerance, with fewer side effects reported compared to other neuropathic pain treatments.
Elavil (Amitriptyline)	NCT00300767	75	Patients reported a 60% improvement in pain intensity and sleep quality, with significant differences observed in the Pittsburgh Sleep Quality Index (PSQI) scores ($p < 0.01$). The trial also noted enhanced mood and reduced fatigue as secondary benefits. *Important Note: The Elavil brand name has been discontinued in the U.S.*

Approved Product Analysis: Lyrica (Pregabalin)

14.4 Management of Fibromyalgia

Population	Endpoint	Scales Used	Time Point	Sample Size	Magnitude of Improvement
Adults with Fibromyalgia (Study F1)	Pain reduction and global improvement	VAS, PGIC, FIQ	14 weeks	N = Not explicitly stated	64% of patients randomized to LYRICA (300 mg, 450 mg, 600 mg) showed pain reduction starting at Week 1. Dose-dependent adverse reactions were noted.
Adults with Fibromyalgia (Study F1)	Patient Global Impression of Change	PGIC	14 weeks	PGB 300 mg: 68.1% improvement PGB 450 mg: 77.8% improvement PGB 600 mg: 66.1% improvement	Higher % improvement compared to placebo (47.6%). Greatest improvement observed in 450 mg dose group.
Adults with Fibromyalgia (Study F2)	Time to loss of therapeutic response	VAS, PGIC, FIQ	6 months	N = Not explicitly stated	38% of LYRICA patients completed 26 weeks of treatment vs. 19% of placebo patients. Longer time to loss of response with LYRICA vs. placebo based on Kaplan-Meier data.
Adults with Fibromyalgia (Study F2)	Maintenance of therapeutic response	VAS, PGIC, FIQ	6 months	54% achieved effective dose during open-label phase	53% of LYRICA-treated patients maintained therapeutic response at 26 weeks compared to 33% for placebo. Improved time to loss of response based on PGIC and FIQ.

VAS: Visual Analog Scale
PGIC: Patient Global Impression of Change
FIQ: Fibromyalgia Impact Questionnaire
PGB: Pregabalin

Approved Product Analysis: Savella (Milnacipran)

14 Management of Fibromyalgia

Population	Endpoint	Scales Used	Time Point	Sample Size	Magnitude of Improvement
Adults with Fibromyalgia (Study 1)	Pain reduction and global improvement	VAS, PGIC, SF-36 PCS	6 months	N = Not explicitly stated	Significant improvement in ≥30% pain reduction with Savella compared to placebo. No additional benefit seen with 200 mg compared to 100 mg.
Adults with Fibromyalgia (Study 2)	Pain reduction and global improvement	VAS, PGIC, SF-36 PCS	3 months	N = Not explicitly stated	Significant improvement in ≥30% pain reduction with Savella compared to placebo. No additional benefit seen with 200 mg compared to 100 mg.
Adults with Fibromyalgia (Study 1 & 2)	Early pain reduction and global improvement	VAS, PGIC, SF-36 PCS	Week 1 and ongoing	Combined population of both studies	Patients experienced pain reduction as early as Week 1. Improvement persisted throughout the study duration.

Study-Specific Observations:

- Study 1 (6 months): Patients treated with Savella at 100 mg/day or 200 mg/day experienced significant improvements in pain relief and functional outcomes compared to placebo. However, the 200 mg dose did not offer additional benefits over the 100 mg dose.
- Study 2 (3 months): Similar results to Study 1, with Savella 100 mg/day and 200 mg/day showing significant improvement in pain and functional outcomes, but no added benefit with the higher dose.
- In both studies, patients who rated themselves as "much" or "very much" improved on PGIC experienced pain reduction as early as Week 1, which persisted throughout the study duration.
- Savella (Milnacipran) demonstrated efficacy in improving pain and global patient outcomes in fibromyalgia, with 100 mg/day being as effective as 200 mg/day. Improvements were observed early in treatment and maintained throughout the study periods.

Abbreviations:

VAS: Visual Analog Scale
PGIC: Patient Global Impression of Change
SF-36 PCS: 36-Item Short Form Survey Physical Component Summary

Analysis of Failed Fibromyalgia Drug Candidates

Name of Drug	Clinical Trial Identifier	Reason for Termination / Drug Failure	Trend Analysis
Mirogabalin	NCT02146430	Failed to achieve statistically significant reduction in pain compared to placebo.	High placebo response rates and challenges in pain assessment metrics contributed to failure.
TNX-102 SL	NCT02436096	Did not meet primary efficacy endpoint of ≥30% pain reduction from baseline.	Inadequate efficacy in reducing fibromyalgia pain; highlights difficulty in developing effective treatments.
IMC-1	NCT04748705	Failed to improve pain more than placebo in overall population.	Suggests complexities in targeting viral components in fibromyalgia treatment.

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Common Failure Points in Fibromyalgia Clinical Trials

1. High Placebo Response Rates:

Case Example: Mirogabalin trials exhibited significant placebo effects, complicating efficacy assessments.

Solution: Implement study designs that minimize placebo responses: Enriched enrollment randomized withdrawal (EERW) designs can identify responders before randomization, reducing the placebo cohort's influence. Use of objective biomarkers or digital health tools to track symptom changes can provide more reliable data. Additionally, employing active run-in periods before trial initiation can better select participants less likely to respond to placebo.

2. Inadequate Patient Selection Criteria:

Case Example: Trials with heterogeneous patient populations may dilute treatment effects.

Solution: Employ stratified patient selection based on symptom severity and biomarkers: Develop diagnostic criteria that incorporate both subjective (e.g., patient-reported outcomes) and objective markers (e.g., neuroimaging data or cytokine levels). Stratification by specific phenotypes (e.g., predominant pain versus fatigue) can improve the ability to detect treatment effects within more homogenous subgroups. Tailoring eligibility criteria to exclude patients with conditions overlapping significantly with fibromyalgia can also refine the participant pool.

3. Flawed Pain Assessment Metrics:

Case Example: Use of "worst daily pain score" as primary endpoint in mirogabalin trials may have affected outcomes.

Solution: Utilize comprehensive and validated pain assessment tools: Multidimensional assessment tools, such as the Brief Pain Inventory or Fibromyalgia Impact Questionnaire, provide a broader evaluation of pain, functionality, and overall symptom burden. Continuous digital monitoring through wearable devices can collect real-time pain data, avoiding biases associated with episodic self-reporting. Additionally, using composite endpoints that integrate multiple dimensions of symptomatology (e.g., pain, fatigue, sleep disturbance) may offer a more holistic view of treatment efficacy.

Safety Concerns and Standard of Care Treatment Options for Fibromyalgia

Safety Concerns

Patients with fibromyalgia often experience heightened medication sensitivity, resulting in side effects even at standard therapeutic doses. Common adverse effects include dizziness, sedation, gastrointestinal upset, and cognitive disturbances such as "brain fog." These side effects can exacerbate the patient's already diminished quality of life, leading to poor treatment adherence.

Polypharmacy is prevalent due to the multi-systemic nature of fibromyalgia, with patients often taking combinations of pain relievers, antidepressants, anticonvulsants, and sleep aids. This increases the risk of drug-drug interactions, particularly with medications metabolized by the liver's cytochrome P450 enzymes.

Chronic use of NSAIDs, frequently used for associated musculoskeletal pain, can lead to gastrointestinal complications (e.g., ulcers, bleeding), renal dysfunction, and cardiovascular risks, especially in patients with comorbidities. Additionally, opioids, though not recommended as first-line therapy, are sometimes used off-label and can lead to dependency and opioid-induced hyperalgesia, further complicating pain management.

Emerging therapies, such as central nervous system (CNS) modulators, must be evaluated for potential long-term effects, including neurotoxicity or exacerbation of comorbid psychiatric disorders like depression and anxiety.

Standard of Care Treatment

Pharmacologic Treatments:

1. Duloxetine and Milnacipran (serotonin-norepinephrine reuptake inhibitors) improve pain and mood disturbances by modulating neurotransmitters involved in pain perception. Common side effects include nausea, insomnia, and dry mouth.
2. Pregabalin (a calcium channel modulator) reduces pain transmission and improves sleep. However, it is associated with dizziness, weight gain, and peripheral edema.
3. Off-label options, such as amitriptyline and gabapentin, are used for their benefits in neuropathic pain but require careful monitoring due to sedation and cognitive side effects.

Non-Pharmacologic Interventions:

1. Exercise Programs: Aerobic and resistance exercises improve overall function, reduce pain sensitivity, and enhance mood, albeit with initial discomfort due to increased pain sensitivity.
2. Cognitive Behavioral Therapy (CBT): CBT helps patients develop coping strategies, manage stress, and improve their psychological resilience.
3. Patient Education: Empowering patients with knowledge about fibromyalgia improves adherence to therapy and promotes self-management.
4. Complementary Therapies: Modalities such as acupuncture, massage, and mindfulness-based stress reduction have shown variable efficacy but are generally well-tolerated.

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Enhancing Clinical Trial Protocols for Fibromyalgia

To improve the likelihood of FDA approval for fibromyalgia treatments, protocol strategies must address the unique challenges posed by this complex disorder. Enhancements should focus on trial design, patient selection, outcome measures, regulatory compliance, and safety evaluations.

1. Optimize Clinical Trial Design:
Adaptive trial designs can address the high variability in fibromyalgia symptomatology. For example, starting with a broader population and refining the inclusion criteria mid-trial based on interim data can enhance the chances of detecting treatment effects. Centralized and remote assessments using digital tools can ensure consistent data collection, reducing inter-site variability. Innovative designs, such as crossover trials, where patients serve as their own controls, can help isolate the drug's effect and counteract high placebo responses.

2. Refine Patient Selection:
Inclusion criteria should focus on homogeneous patient populations by incorporating clinical and biological markers specific to fibromyalgia. For example, selecting patients based on objective measures of central sensitization or specific genetic profiles could reduce variability in response. Additionally, excluding patients with overlapping conditions like chronic fatigue syndrome or depression can help isolate the effects of the investigational treatment.

3. Employ Robust Outcome Measures:
Standard primary endpoints, like pain reduction, should be supplemented with composite outcomes that reflect the multidimensional nature of fibromyalgia, including fatigue, cognitive dysfunction, and sleep quality. Tools such as the Patient-Reported Outcomes Measurement Information System (PROMIS) or wearable technology for real-time symptom monitoring can capture nuanced changes in patients' day-to-day experiences. Employing patient-reported outcome measures (PROMs) that align with FDA guidance on capturing meaningful clinical benefits is crucial.

4. Enhance Regulatory Engagement:
Early and continuous dialogue with the FDA can clarify expectations and preemptively address concerns regarding trial design and endpoints. Engaging with the FDA under pathways such as Breakthrough Therapy Designation or Fast Track can accelerate the review process and foster collaboration. Conducting pre-IND (Investigational New Drug) meetings can ensure that trial protocols align with regulatory requirements.

5. Address Safety Profiles:
Safety evaluations should focus on long-term use implications of investigational drugs, considering the chronic nature of fibromyalgia. Preclinical studies should investigate the potential for neurotoxicity, dependency, and tolerance. Post-marketing surveillance plans should be detailed in the protocol to ensure comprehensive monitoring after approval. Special attention should be given to subgroup analyses, identifying populations more susceptible to adverse events.

Notable Key Opinion Leaders in Fibromyalgia Research

Name	Specialty	Designation	Location	Brief Bio
Gregory A Tooley *Expertise in Psychology*	Psychology	Professor of Psychology at Deakin University, Victoria	Victoria, Australia	Professor Gregory A. Tooley is a faculty member in the School of Psychology at Deakin University. His research interests include health psychology and the psychological aspects of chronic pain conditions such as fibromyalgia. He has contributed to various studies focusing on the psychological impact of chronic illnesses and has been recognized for his work in advancing the understanding of psychological interventions in health settings.
Dr, Jason D Lickliter *MBBS, FRACP*	Medical Oncology; Hematology	Chief Medical Officer at Nucleus Network Ltd, Victoria, Australia	Victoria, Australia	Dr. Jason D. Lickliter serves as the Chief Medical Officer at Nucleus Network Ltd, a leading clinical research organization. He oversees clinical trials, including those related to chronic pain conditions such as fibromyalgia, ensuring the development of safe and effective therapeutic interventions.
Sepehr Shakib *MBBS, FRACP (Fellow of the Royal Australasian College of Physicians)*	Clinical Pharmacology	Professor of Clinical Pharmacology at The University of Adelaide	South Australia, Australia	Professor Sepehr Shakib is a clinical pharmacologist at The University of Adelaide. He has been involved in research related to the pharmacological management of chronic pain conditions, including fibromyalgia. His work focuses on optimizing therapeutic outcomes and minimizing adverse effects in patients with complex medical conditions.
Dr. Daniel Ellyard *MBBS, FANZCA (Fellow of the Australian and New Zealand College of Anaesthetists)*	Pain Medicine; Anesthesiology	Anaesthetist at Sir Charles Gairdner Hospital, Western Australia	Western Australia, Australia	Dr. Daniel Ellyard is an anaesthetist specializing in pain medicine at Sir Charles Gairdner Hospital. He is involved in the management of patients with chronic pain syndromes, including fibromyalgia, utilizing both pharmacological and interventional strategies to improve patient outcomes.
Nicholas Aitcheson *MBBS, FAFRM (Fellow of the Australasian Faculty of Rehabilitation Medicine)*	Physical Medicine and Rehabilitation	Specialist in Physical Medicine and Rehabilitation at Queensland Health, Queensland, Australia	Queensland, Australia	Dr. Nicholas Aitcheson is a specialist in physical medicine and rehabilitation with Queensland Health. He focuses on the rehabilitation of patients with musculoskeletal disorders, including fibromyalgia, aiming to enhance physical function and quality of life through comprehensive rehabilitation programs.

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