



EVIDENCE SEARCH RESULTS

Question/subject of request:	Pathways for dual diagnosis of ME/CFs & Fibromyalgia
Date requested:	10 th March 2025
Date completed:	24 th March 2025
Compiled by:	Cate Newell – Knowledge & Library Services Manager

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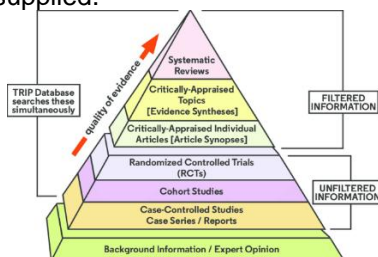
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Contents (click to jump to each section):

- [EXAMPLES FROM OTHER ORGANISATIONS](#)
- [UPTODATE AND BMJ BEST PRACTICE](#)
- [GUIDELINES](#)
- [JOURNAL ARTICLES](#)

Summary of search results:

Unfortunately, I could not find any specific examples of existing pathways for managing dual diagnosis of ME/CFS and fibromyalgia, however, I have identified a few teams in other NHS organisations which you may like to reach out to (see [Examples from Other Organisations](#)).

A report by [Healthwatch Kingston \(2024\)](#) summarises a patient survey of people who have dual diagnosis of ME/CFS and FM and provides some recommendations for the ICB and Primary Care.

The clinical summary in [UpToDate](#) states that 30-70% of patients with FM meet criteria for CFS and IBS. In terms of pathways, [BMJ Best Practice](#) suggests that treatment pathway for patients with dual diagnosis should focus on the predominant phenotype – if pain – treat as FM, if fatigue the stronger symptom, treat as CFS/ME. The [RCP](#) national guidelines agree with this. I have provided links to other [guidelines](#), such as NICE.

I have included [journal articles](#) which further explore the comorbidity of CFS/ME and fibromyalgia, and the difficulties in diagnosing between the conditions. In terms of pathways/treatment, there was an article by [Leach 2024](#) which discusses remote consultations for CFS/ME/FM which may be of interest.

I hope this is helpful. Please do let us know if you need any further information.



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Examples from other organisations

[Myalgic encephalomyelitis \(ME/CFS\) & Fibromyalgia Service. : University College London Hospitals NHS Foundation Trust](#)

[Pain Pathway and CFS/ME Service - Primary Integrated Community Services Ltd](#)

[HealthWatch Kingston Pulse Check Report \(2024\)](#)

Accessed: 24th March 2025.

UpToDate and BMJ Best Practice

UpToDate

<https://www.uptodate.com/contents/fibromyalgia-clinical-manifestations-and-diagnosis-in-adults>

Accessed: 24th March 2025 (NHS OpenAthens login required)

Functional somatic syndromes and related disorders – FM is often present in patients together with other common functional somatic syndromes, including irritable bowel syndrome (IBS) [48]; chronic fatigue syndrome (CFS), also known as myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) [49]; migraine and tension-type headaches [50,51]; as well as chronic bladder and pelvic pain syndromes [52,53] and temporomandibular disorders [54]. The prevalence of FM in each of these disorders varies from 20 to 50 percent, and 30 to 70 percent of patients with FM meet criteria for CFS and IBS [53,54]. This aggregation of related clinical conditions has been termed chronic overlapping pain conditions (COPCs) [55].

Demographic, clinical, and potential pathophysiologic characteristics of CFS, IBS, and other functional somatic syndromes are very similar to those of FM, and patients with FM may receive multiple diagnoses according to subspecialty referral patterns, if the clinicians caring for the patient are diagnostic "splitters" (ie, those who prefer to divide what others might consider as one entity into multiple distinct entities). On the other hand, the exact label may be less important if these functional illnesses are considered as part of a spectrum. Each of these conditions is diagnosed using criteria based upon the patients' symptoms when other diseases have been excluded, and they tend to be controversial because of the absence of a specific diagnostic test or of objective pathophysiologic abnormalities. Screening questions that can be useful in determining whether additional evaluation for one of them is warranted include [54]:

- CFS – Have you had unexplained, persistent, or relapsing fatigue for at least six months?

BMJ Best Practice

[Fibromyalgia - Differentials | BMJ Best Practice](#)

There is considerable overlap between fibromyalgia (FM) and CFS, and it is often challenging to differentiate the two. A large portion of patients with FM meet criteria for CFS/ME, including the post-exertional malaise. In practice treatment should focus on the predominant phenotype, that is if pain is the predominant issue and fatigue seems like a passenger address as FM. If patients appear more tender, but have significant fatigue, the treatment approach should be from a CFS/ME perspective.

Guidelines

NICE Guidelines

[Overview | Chronic pain \(primary and secondary\) in over 16s: assessment of all chronic pain and management of chronic primary pain | Guidance | NICE \(Apr 2021\)](#)



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[Overview | Myalgic encephalomyelitis \(or encephalopathy\)/chronic fatigue syndrome: diagnosis and management | Guidance | NICE \(October 2021\)](#)

Local guideline

[Fibromyalgia \(Remedy BNSSG ICB\)](#)

In the majority of cases a diagnosis of fibromyalgia can be made in primary care and then managed using self help and community services (see sections below). GPs sometimes feel that they have to get a second opinion to rubber stamp the diagnosis but local consultants feel that this is not necessary unless there are red flags. The rheumatology departments no longer have access to specialist physiotherapy or psychological therapy for patients with Fibromyalgia.

National guideline

[The diagnosis of fibromyalgia syndrome | RCP](#)

Symptoms of chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) can overlap with FMS. Details are outside the scope of this guidance. Pragmatically, where fatigue and/or excessive sleep is the predominant patient complaint, the patient should also be assessed for CFS.⁴² Some patients may fit criteria for both FMS and CFS.

Journal articles

Evidence Search Results from your Knowledge & Library Service

1. [Adrenergic dysfunction in patients with myalgic encephalomyelitis/chronic fatigue syndrome and fibromyalgia: A systematic review and meta-analysis](#)

Authors: Hendrix, Jolien;Fanning, Lara;Wyns, Arne;Ahmed, Ishtiaq;Patil, Madhura Shekhar;Richter, Emma;Van Campenhout, Jente;Ickmans, Kelly;Mertens, Rembert;Nijs, Jo;Godderis, Lode and Polli, Andrea

Publication Date: 2025

Journal: European Journal of Clinical Investigation 55(1), pp. 1–20

Abstract: Background: Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and fibromyalgia (FM) are comorbid disorders with overlapping symptoms. Research highlights autonomic dysfunction compared to healthy individuals, particularly involving the sympathetic branch. While past reviews focused on neurophysiological assessments, this systematic review summarises biological adrenergic markers, offering deeper insights into the observed sympathetic dysfunction in ME/CFS and FM aiming to identify targetable pathophysiological mechanisms. Methods: A systematic search was performed on PubMed, Web of Science, Embase and Scopus. Studies investigating peripheral biological markers of adrenergic function in patients with ME/CFS or FM compared to healthy controls at baseline were included. Meta-analyses were performed using R statistical software. Results: This meta-analysis of 37 studies, encompassing 543 ME/CFS patients and 651 FM patients, compared with 747 and 447 healthy controls, respectively, revealed elevated adrenaline (SMD =.49 [.31–.67]; Z = 5.29, p <.01) and β_1 adrenergic receptor expression (SMD =.79 [.06–1.52]; Z = 2.13; p =.03) in blood of ME/CFS patients at rest. Additionally, patients with ME/CFS had a greater increase in the expression of α_2A adrenergic receptor (AR, SMD =.57 [.18–.97]; Z = 2.85, p <.01), β_2 AR (SMD =.41 [.02–.81]; Z = 2.04; p =.04) and COMT (SMD =.42 [.03–.81]; Z = 2.11; p =.03) after exercise and an increased response of noradrenaline to an orthostatic test (SMD =.11 [–.47 to –.70]; Z = 2.10; p =.04), both found in blood. FM patients showed no significant differences at baseline but exhibited a diminished adrenaline response to exercise (SMD = –.79 [–1.27 to –.30]; Z = –3.14; p <.01). Conclusion: This systematic review and meta-analysis revealed adrenergic dysfunction mainly in patients with ME/CFS. Higher baseline adrenaline levels and atypical responses to exercise in ME/CFS indicate that sympathetic dysfunction, underscored by adrenergic abnormalities, is more involved in the pathophysiology of ME/CFS rather than FM. ABSTRACT



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Access or request full text: <https://libkey.io/10.1111/eci.14318>

2. [**Patient experiences of remote consulting with chronic fatigue syndrome/myalgic encephalomyelitis and fibromyalgia: a qualitative study**](#)

Authors: Leach, Helen;Eccles, Abi;Chew-Graham, Carolyn and Atherton, Helen

Publication Date: 2025

Journal: BJGP Open

Abstract: Background: Remote and digital consulting in primary care has rapidly expanded since March 2020. It is important to understand patient experiences, particularly for those living with complex long-term conditions, to identify how care can best be delivered, including within the remote space.; Aim: To explore the experiences of people living with chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) and fibromyalgia when consulting remotely in primary care.; Design & Setting: Semi-structured interviews with patients living with CFS/ME and fibromyalgia in general practice in England.; Method: Semi-structured interviews were carried out with 13 participants. The interviews were transcribed and analysed thematically according to a Foucauldian theoretical framework.; Results: All participants highlighted needing to feel believed by clinicians. Many reported difficulties with telephone and online consulting owing to the lack of physical communication. Positive outcomes were reported when there was a good relationship with a clinician. Continuity in care and recognising the complexity of these conditions were also considered important.; Conclusion: This study allowed people living with CFS/ME and fibromyalgia to describe their experiences when consulting remotely. Participants highlighted needing to feel listened to and felt they benefited from an ongoing relationship with a clinician although this was difficult to achieve when consulting remotely. Some advantages of remote consulting were reported, particularly when symptoms were troublesome. Flexible access systems, with a range of consultation modalities or preferred clinician(s) availability, could improve healthcare encounters, particularly given the increased use of remote consulting in primary care. (Copyright © 2025, The Authors.)

Access or request full text: <https://libkey.io/10.3399/BJGPO.2024.0079>

3. [**Chronic Overlapping Pain Conditions in people with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome \(ME/CFS\): a sample from the Multi-site Clinical Assessment of ME/CFS \(MCAM\) study**](#)

Authors: Fall, Elizabeth A.;Chen, Yang;Lin, Jin-Mann S.;Issa, Anindita;Brimmer, Dana J.;Bateman, Lucinda;Lapp, Charles W.;Podell, Richard N.;Natelson, Benjamin H.;Kogelnik, Andreas M.;Klimas, Nancy G.;Peterson, Daniel L.;Unger, Elizabeth R.;Tian, Hao;Bonner, Kathleen;Cornelius, Monica;Dimulescu, Irina;Helton, Britany;Khin, Maung and Rajeevan, Mangalathu

Publication Date: 2024

Journal: BMC Neurology 24(1), pp. 1–11

Abstract: Background : Chronic overlapping pain conditions (COPCs), pain-related conditions that frequently occur together, may occur in patients with myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and could impact illness severity. This study aimed to identify comorbid COPCs in patients with ME/CFS and evaluate their impact on illness severity. Methods: We used data from 923 participants in the Multi-Site Clinical Assessment of ME/CFS study, conducted in seven U.S. specialty clinics between 2012 and 2020, who completed the baseline assessment (595 ME/CFS and 328 healthy controls (HC)). COPCs included chronic low



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back pain (cLBP), chronic migraine/headache (cMHA), fibromyalgia (FM), interstitial cystitis/irritable bladder (IC/IB), irritable bowel syndrome (IBS), temporomandibular disorder (TMD). Illness severity was assessed through questionnaires measuring symptoms and functioning. Multivariate analysis of variance and analysis of covariance models were used for analyses. Log-binomial regression analyses were used to compute prevalence of COPCs and prevalence ratios (PR) between groups with 95% confidence intervals. Both unadjusted and adjusted results with age and sex are presented. Results : 76% of participants with ME/CFS had at least one COPCs compared to 17.4% of HC. Among ME/CFS participants, cMHA was most prevalent (48.1%), followed by FM (45.0%), cLBP (33.1%), and IBS (31.6%). All individual COPCs, except TMD, were significantly more frequent in females than males. The unadjusted PR (ME/CFS compared to HC) was highest for FM 147.74 (95% confidence interval (CI) = 20.83-1047.75], followed by cLBP 39.45 (12.73-122.27)], and IC/IB 13.78 (1.88-101.24)]. The significance and order did not change after age and sex adjustment. The COPC comorbidities of cLBP and FM each had a significant impact on most health measures, particularly in pain attributes (Cohen's d effect size 0.8 or larger). While the impact of COPC comorbidities on non-pain attributes and quality of life measures was less pronounced than that on pain, statistically significant differences between ME/CFS participants with and without COPCs were still evident. Conclusions: More than 75% of ME/CFS participants had one or more COPCs. Multiple COPCs further exacerbated illness severity, especially among females with ME/CFS. Assessment and management of COPCs may help improve the health and quality of life for patients with ME/CFS.

Access or request full text: <https://libkey.io/10.1186/s12883-024-03872-0>

4. [How to understand the overlap of long COVID, chronic fatigue syndrome/myalgic encephalomyelitis, fibromyalgia and irritable bowel syndromes](#)

Authors: Goldenberg, Don L.

Publication Date: 2024

Journal: Seminars in Arthritis and Rheumatism 67

Access or request full text: <https://libkey.io/10.1016/j.semarthrit.2024.152455>

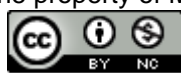
5. [Identifying microRNAs Possibly Implicated in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome and Fibromyalgia: A Review](#)

Authors: Tsamou, Maria;Kremers, Fabienne A. C.;Samaritakis, Keano A. and Roggen, Erwin L.

Publication Date: 2024

Journal: International Journal of Molecular Sciences 25(17), pp. 9551

Abstract: Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and fibromyalgia (FM) are chronic syndromes of unknown etiology, accompanied by numerous symptoms affecting neurological and physical conditions. Despite frequent revisions of the diagnostic criteria, clinical practice guidelines are often outdated, leading to underdiagnosis and ineffective treatment. Our aim was to identify microRNA (miRNA) biomarkers implicated in pathological mechanisms underlying these diseases. A comprehensive literature review using publicly accessible databases was conducted. Interesting miRNAs were extracted from relevant publications on ME/CFS and/or FM, and were then linked to pathophysiological processes possibly manifesting these chronic diseases. Dysregulated miRNAs in ME/CFS and FM may serve as promising biomarkers for these diseases. Key identified miRNAs, such as miR-29c, miR-99b, miR-128, miR-374b, and miR-766, were frequently mentioned for their roles in immune response, mitochondrial dysfunction, oxidative stress, and central sensitization, while miR-23a, miR-103, miR-152, and miR-320 were implicated in multiple crucial pathological processes for FM and/or ME/CFS. In summary, both ME/CFS and FM seem to share many dysregulated biological or molecular processes, which may contribute to their commonly shared symptoms. This miRNA-based approach offers new angles for discovering molecular markers urgently needed for early diagnosis or therapeutics to tackle the pathology of these medically unexplained chronic diseases. ABSTRACT FROM AUTHOR]; Copyright of International Journal of Molecular Sciences is the property of MDPI and its content may not be copied or emailed to multiple sites



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Access or request full text: <https://libkey.io/10.3390/ijms25179551>

6. [**A comparison of pain, fatigue, and function between post-COVID-19 condition, fibromyalgia, and chronic fatigue syndrome: a survey study**](#)

Authors: Haider, Saman;Janowski, Adam J.;Lesnak, Joseph B.;Hayashi, Kazuhiro;Dailey, Dana L.;Chimenti, Ruth;Frey-Law, Laura;Sluka, Kathleen A. and Berardi, Giovanni

Publication Date: 2023

Journal: Pain 164(2), pp. 385–401

Abstract: Abstract: A growing number of individuals report prolonged symptoms following acute Coronavirus-19 (COVID-19) infection, known as post-COVID-19 condition (post-COVID-19). While studies have emerged investigating the symptom sequelae of post-COVID-19, there has been limited investigation into the characterization of pain, fatigue, and function in these individuals, despite initial reports of a clinical phenotype similar to fibromyalgia syndrome (FMS) and chronic fatigue syndrome (CFS)/myalgic encephalomyelitis (ME). This study aimed to characterize multiple symptom domains in individuals reporting post-COVID-19 and compare its clinical phenotype with those with FMS and CFS. A total of 707 individuals with a single or comorbid diagnosis of post-COVID-19, FMS, and/or CFS completed multiple surveys assessing self-reported pain, fatigue, physical and cognitive function, catastrophizing, kinesiophobia, anxiety, depression, dyspnea, and sleep quality. In all 3 diagnoses, elevated pain, fatigue, anxiety, depression, catastrophizing, and kinesiophobia were reported. Physical and cognitive function were similarly impacted among individuals with post-COVID-19, FMS, and CFS; however, individuals with post-COVID-19 reported lower pain and fatigue than FMS and CFS. The comorbid diagnosis of post-COVID-19 with FMS and/or CFS further exacerbated pain, fatigue, and psychological domains when compared with post-COVID-19 alone. In summary, individuals with post-COVID-19 report a symptom phenotype similar to FMS and CFS, negatively impacting cognitive and physical function, but with less severe pain and fatigue overall. These findings may help direct future investigations of the benefit of a biopsychosocial approach to the clinical management of post-COVID-19. (Copyright © 2022 International Association for the Study of Pain.)

Access or request full text: <https://libkey.io/10.1097/j.pain.0000000000002711>

7. [**Increased gut permeability and bacterial translocation are associated with fibromyalgia and myalgic encephalomyelitis/chronic fatigue syndrome: implications for disease-related biomarker discovery**](#)

Authors: Martín, Franz;Blanco-Suárez, Manuel;Zambrano, Paola;Cáceres, Oscar;Almirall, Miriam;Alegre-Martín, José;Lobo, Beatriz;González-Castro, Ana Maria;Santos, Javier;Domingo, Joan Carles;Jurek, Joanna and Castro-Marrero, Jes

Publication Date: 2023

Journal: Frontiers in Immunology , pp. 1

Abstract: Background: There is growing evidence of the significance of gastrointestinal complaints in the impairment of the intestinal mucosal barrier function and inflammation in fibromyalgia (FM) and in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). However, data on intestinal permeability and gut barrier dysfunction in FM and ME/CFS are still limited with conflicting results. This study aimed to assess circulating biomarkers potentially related to intestinal barrier dysfunction and bacterial translocation and their association with self-reported symptoms in these conditions. Methods: A pilot multicenter, cross-sectional cohort study with consecutive enrolment of 22 patients with FM, 30 with ME/CFS and 26 matched healthy controls. Plasma levels of anti-beta-lactoglobulin antibodies (IgG anti-β-LGB), zonulin-1



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(ZO-1), lipopolysaccharides (LPS), soluble CD14 (sCD14) and interleukin-1-beta (IL-1 β) were assayed using ELISA. Demographic and clinical characteristics of the participants were recorded using validated self-reported outcome measures. The diagnostic accuracy of each biomarker was assessed using the receiver operating characteristic (ROC) curve analysis. Results: FM patients had significantly higher levels of anti- β -LGB, ZO-1, LPS, and sCD14 than healthy controls (all $P < 0.0001$). In ME/CFS patients, levels of anti- β -LGB, ZO-1, LPS, and sCD14 were significantly higher than controls, but lower than in FM (all $P < 0.01$), while there was no significant difference in IL-1 β level. In the FM and ME/CFS cohorts, both anti- β -LGB and ZO-1 correlated significantly with LPS and sCD14 ($P < 0.001$ for both). In the FM group, both anti- β -LGB and ZO-1 were correlated significantly with physical and mental health components on the SF-36 scale ($P < 0.05$); whereas IL-1 β negatively correlated with the COMPASS-31 score ($P < 0.05$). In the ME/CFS cohort, ZO-1 was positively correlated with the COMPASS-31 score ($P < 0.05$). The ROC curve analysis indicated a strong ability of anti- β -LGB, ZO-1, LPS and sCD14 to predictively distinguish between FM and ME/CFS from healthy controls ($P < 0.0001$). Conclusion: Biomarkers of intestinal barrier function and inflammation were associated with autonomic dysfunction assessed by COMPASS-31 scores in FM and ME/CFS respectively. Anti- β -LGB antibodies, ZO-1, LPS, and sCD14 may be putative predictors of intestinal barrier dysfunction in these cohorts. Further studies are needed to assess whether these findings are causal and can therefore be applied in clinical practice.

Access or request full text: <https://libkey.io/10.3389/fimmu.2023.1253121>

8. [Influence of Chronic Fatigue Syndrome Codiagnosis on the Relationship between Perceived and Objective Psychoneuro-Immunoendocrine Disorders in Women with Fibromyalgia.](#)

Authors: Otero, Eduardo;Galvez, Isabel;Ortega, Eduardo and Hinchado, Maria Dolores

Publication Date: May 20 ,2023

Journal: Biomedicines 11(5)

Abstract: Although the predominant symptom in fibromyalgia (FM) is muscle pain, and fatigue in chronic fatigue syndrome (CFS), differential diagnosis is very difficult. This research investigates the psychoneuroimmunoendocrine disorders of FM patients and ascertains whether a previous CFS diagnosis affected them. Through accelerometry objective parameters, physical activity/sedentarism levels in relation to fatigue are studied, as well as whether perceived levels of stress, anxiety, and pain correspond to objective biomarkers, all of these with respect to a reference group (RG) of women without FM. FM patients have a worse psychological state and perceived quality of life than those with RG. These perceived outcomes are consistent with impaired objective levels of a sedentary lifestyle, higher systemic levels of cortisol and noradrenaline, and lower levels of serotonin. However, FM patients with a previous CFS diagnosis had lower systemic levels of IL-8, cortisol, oxytocin, and higher levels of adrenaline and serotonin than FM patients without diagnosed CFS. In conclusion, while perceived health parameters do not detect differences, when objective neuroimmunoendocrine parameters related to stress, inflammation, pain, and fatigue are used, people with CFS could be overdiagnosed with FM. This reinforces the need for objective biomarker assessment of these patients for better diagnostic discrimination between both syndromes.

Access or request full text: <https://libkey.io/10.3390/biomedicines11051488>

9. [Autoantibody Correlation Signatures in Fibromyalgia and Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Association with Symptom Severity](#)

Authors: Ryabkova, Varvara A.;Gavrilova, Natalia Y.;Poletaeva, Alina A.;Pukhalenko, Alexander I.;Koshkina, Irina A.;Churilov, Leonid P. and Shoenfeld, Yehuda

Publication Date: 2023

Journal: Biomedicines 11(2), pp. 257

Abstract: Recent studies provide some evidence for the contribution of antibody-mediated



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autoimmune mechanisms to the nature of fibromyalgia (FM) and myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). Much attention was paid to the autoantibodies (AAb) targeting G protein-coupled receptors as natural components of the immune system. However, the natural AAb network is much more extensive, and has not been previously investigated in these disorders. The enzyme immunoassays ELI-Viscero-Test and ELI-Neuro-Test were used to determine changes in serum content of 33 natural AAb to neural, organ-specific and non-tissue-specific autoantigens (a) in 11 ME/CFS patients with comorbid FM; (b) in 11 ME/CFS patients without FM; (c) in 11 healthy controls. Individual AAb profiles and their correlation with some clinical symptoms were analyzed. Both patients with ME/CFS(-)FM and ME/CFS(+)-FM were characterized by more frequent and pronounced deviations in the immunoreactivity to GABA-receptors than healthy controls. Although the level of other natural AAb did not differ between study groups, AAb correlation signatures were altered in patients compared to healthy controls. Both in patients and healthy controls the level of natural AAb to various neural and tissue-specific antigens correlated with the severity of fatigue, bodily pain, depression, anxiety, physical and mental health-related quality of life. Notably, widely different correlation patterns were observed between study groups. Findings from this pilot study provide some evidence that the homeostasis of autoimmune relationships, which are possibly a physiological part of our immune system, may be altered in FM and ME/CFS. The correlation of disease-induced perturbations in individual AAb profiles with some clinical symptoms may arise from the immune system's ability to reflect qualitative and quantitative changes in antigenic composition of the body.

Access or request full text: <https://libkey.io/10.3390/biomedicines11020257>

10. [**Myalgic encephalomyelitis/chronic fatigue syndrome and fibromyalgia are indistinguishable by their cerebrospinal fluid proteomes**](#)

Authors: Schutzer, Steven E.;Liu, Tao;Tsai, Chia-Feng;Petyuk, Vladislav A.;Schepmoes, Athena A.;Wang, Yi-Ting;Weitz, Karl K.;Bergquist, Jonas;Smith, Richard D. and Natelson, Benjamin H.

Publication Date: 2023

Journal: Annals of Medicine 55(1), pp. 1–7

Abstract: Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) and fibromyalgia have overlapping neurologic symptoms particularly disabling fatigue. This has given rise to the question whether they are distinct central nervous system (CNS) entities or is one an extension of the other. To investigate this, we used unbiased quantitative mass spectrometry-based proteomics to examine the most proximal fluid to the brain, cerebrospinal fluid (CSF). This was to ascertain if the proteome profile of one was the same or different from the other. We examined two separate groups of ME/CFS, one with (n = 15) and one without (n = 15) fibromyalgia. We quantified a total of 2083 proteins using immunoaffinity depletion, tandem mass tag isobaric labelling and offline two-dimensional liquid chromatography coupled to tandem mass spectrometry, including 1789 that were quantified in all the CSF samples. ANOVA analysis did not yield any proteins with an adjusted p value <.05. This supports the notion that ME/CFS and fibromyalgia as currently defined are not distinct entities. ME/CFS and fibromyalgia as currently defined are not distinct entities. Unbiased quantitative mass spectrometry-based proteomics can be used to discover cerebrospinal fluid proteins that are biomarkers for a condition such as we are studying. ABSTRACT FROM AUTHOR]; Copyright of Annals of Medicine is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This abstract may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full abstract. (Copyright applies to all Abstracts.)

Access or request full text: <https://libkey.io/10.1080/07853890.2023.2208372>





11. [Pain-Related Post-Exertional Malaise in Myalgic Encephalomyelitis / Chronic Fatigue Syndrome \(ME/CFS\) and Fibromyalgia: A Systematic Review and Three-Level Meta-Analysis](#)

Authors: Barhorst, Ellen E.; Boruch, Alexander E.; Cook, Dane B. and Lindheimer, Jacob B.

Publication Date: 2022

Journal: Pain Medicine 23(6), pp. 1144–1157

Abstract: Objective Myalgic encephalomyelitis / chronic fatigue syndrome (ME/CFS) and fibromyalgia (FM) are two debilitating, moderately comorbid illnesses in which chronic musculoskeletal pain symptoms are prevalent. These individuals can experience post-exertional malaise (PEM), a phenomenon in which symptom severity is worsened for 24 hours or longer after physical stress, but the pain-related component of PEM is not well characterized. Design Systematic review and meta-analysis. Methods Case-control studies involving adults with ME/CFS or FM and measuring pain symptoms before and after exposure to a standardized aerobic exercise test were included. Hedges' d effect sizes were aggregated with random-effects models, and potential moderators were explored with meta-regression analysis. Results were adjusted for nesting effects with three-level modeling. Results Forty-five effects were extracted from 15 studies involving 306 patients and 292 healthy controls. After adjusting for nesting effects, we observed a small to moderate effect indicating higher post-exercise pain in patients than in controls (Hedges' $d = 0.42$; 95% confidence interval CI]: 0.16–0.67). The mean effect was significantly moderated by pain measurement time point ($b = -0.19$, $z = -2.57$, $P = 0.01$), such that studies measuring pain 8–72 hours after exercise showed larger effects ($d = 0.71$, 95% CI = 0.28–1.14) than did those measuring pain 0–2 hours after exercise ($d = 0.32$, 95% CI = 0.10–0.53). Conclusions People with ME/CFS and FM experience small to moderate increases in pain severity after exercise, which confirms pain as a component of PEM and emphasizes its debilitating impact in ME/CFS and FM. Future directions include determining mechanisms of pain-related PEM and developing exercise prescriptions that minimize symptom exacerbation in these illnesses.

Access or request full text: <https://libkey.io/10.1093/pm/pnab308>

12. [Influence of Codiagnosis of Chronic Fatigue Syndrome and Habitual Physical Exercise on the Psychological Status and Quality of Life of Patients with Fibromyalgia](#)

Authors: Hinchado, María Dolores; Otero, Eduardo; Navarro, María Del Carmen; Martín-Cordero, Leticia; Gálvez, Isabel and Ortega, Eduardo

Publication Date: -09-28, 2022

Journal: Journal of Clinical Medicine 11(19), pp. 5735

Abstract: Fibromyalgia (FM) and Chronic Fatigue Syndrome (CFS) are two diseases that are frequently codiagnosed and present many similarities, such as poor tolerance to physical exercise. Although exercise is recommended in their daily routine to improve quality of life, little is known about how CFS codiagnosis affects that. Using scientifically validated questionnaires, we evaluated the psychological state and quality of life of patients with FM ($n = 70$) and how habitual physical exercise (HPE) reported by patients with only FM (FM-only $n = 38$) or codiagnosed with CFS (FM + CFS, $n = 32$) influences those aspects. An age-matched reference group of "healthy" women without FM (RG, $n = 70$) was used. The FM-only group presented a worse psychological state and quality of life compared to RG, with no influence of CFS codiagnosis. The patients of the FM-only and FM + CFS groups who perform HPE presented better levels of stress and state anxiety, but with no differences between them. Depression and trait anxiety improved only in women with just FM. CFS codiagnosis does not worsen the psychological and quality of life impairment of FM patients and does not have a great influence on the positive effect of HPE.

Access or request full text: <https://libkey.io/10.3390/jcm11195735>





13. [Fibromyalgia, Chronic Fatigue Syndrome, and Multiple Chemical Sensitivity: Illness Experiences](#)

Authors: Alameda Cuesta, Almudena; Pazos Garcíandía, Álvaro; Oter Quintana, Cristina and Losa Iglesias, Marta Elena

Publication Date: -01-01 ,2021

Journal: Clinical Nursing Research 30(1), pp. 32–41

Abstract: Fibromyalgia, chronic fatigue syndrome/myalgic encephalomyelitis, and multiple chemical sensitivity can be considered contested illnesses. The questioning of the status of these conditions as real diseases reduces feelings of legitimacy in those affected. The purpose of this study was to analyze subjectivity construction processes in people with these diseases. A qualitative exploratory study was conducted from the perspective of hermeneutic phenomenology and ethnosociology. We used life stories for compiling data (13 informants were interviewed face-to-face), and sociological discourse analysis was developed. Three main categories were identified: (a) self and grieving; (b) images and practices relating to fibromyalgia, chronic fatigue syndrome/myalgic encephalomyelitis, and multiple chemical sensitivity; and (c) relationships with health professionals. This study shows that daily experiences of people living with these diseases are marked by stigmatization processes. The ultimate purpose of nursing care for people with these conditions should be to reduce their vulnerability and exclusion.

Access or request full text: <https://libkey.io/10.1177/1054773819838679>

14. [Beyond bones: The relevance of variants of connective tissue \(hypermobility\) to fibromyalgia, ME/CFS and controversies surrounding diagnostic classification: an observational study](#)

Authors: Eccles, Jessica A.; Thompson, Beth; Themelis, Kristy; Amato, Marisa L.; Stocks, Robyn; Pound, Amy; Jones, Anna-Marie; Cipinova, Zdenka; Shah-Goodwin, Lorraine; Timeyin, Jean; Thompson, Charlotte R.; Batty, Thomas; Harrison, Neil A.; Critchley, Hugo D. and Davies, Kevin A.

Publication Date: -01-01 ,2021

Journal: Clinical Medicine 21(1), pp. 53–58

Abstract: Background

Fibromyalgia and myalgic encephalomyelitis / chronic fatigue syndrome (ME/CFS) are poorly understood conditions with overlapping symptoms, fuelling debate as to whether they are manifestations of the same spectrum or separate entities. Both are associated with hypermobility, but this remains significantly undiagnosed, despite impact on quality of life.

Objective

We planned to understand the relevance of hypermobility to symptoms in fibromyalgia and ME/CFS.

Method

Sixty-three patient participants presented with a confirmed diagnosis of fibromyalgia and/or ME/CFS; 24 participants were healthy controls. Patients were assessed for symptomatic hypermobility.

Results

Evaluations showed exceptional overlap in patients between fibromyalgia and ME/CFS, plus 81% met Brighton criteria for hypermobility syndrome (odds ratio 7.08) and 18% met 2017 hypermobile Ehlers–Danlos syndrome (hEDS) criteria. Hypermobility scores significantly predicted symptom levels.

Conclusion

Symptomatic hypermobility is particularly relevant to fibromyalgia and ME/CFS, and our findings highlight high rates of mis-/underdiagnosis. These poorly understood conditions have a considerable impact on quality of life and our observations have implications for diagnosis and treatment targets.

Access or request full text: <https://libkey.io/10.7861/clinmed.2020-0743>



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15. [Chronic fatigue syndrome \(CFS\)/Myalgic Encephalomyelitis \(ME\) and Fibromyalgia \(FM\): the foundation of a relationship](#)

Authors: McKay, Pamela G.;Martin, Colin R.;Walker, Helen and Fleming, Mick

Publication Date: 2021

Journal: British Journal of Pain 15(1), pp. 26–39

Abstract: Introduction: Chronic fatigue syndrome (CFS)/Myalgic Encephalomyelitis (ME) and fibromyalgia (FM) are both debilitating syndromes with complex polysymptomatology. Early research infers that a relationship may exist even though the diagnosis provided may influence the management trajectory. In the absence of a diagnostic test and treatment, this study aims to confirm the symptoms and their severity, which may infer a relationship and influence future research.; Method: A quasi-experimental design was utilised, using Internet-based self-assessment questionnaires focusing on nine symptom areas: criteria, pain, sleep, fatigue, anxiety and depression, health-related quality of life, self-esteem and locus of control. The questionnaires used for data collection are as follows: the American Centre for Disease Control and Prevention Symptom Inventory for CFS/ME (American CDC Symptom Inventory); the American College of Rheumatology (ACR) Criteria for FM; Fibromyalgia Impact Questionnaire (FIQ); McGill Pain Questionnaire (MPQ); Multidimensional Fatigue Inventory (MFI); Pittsburgh Sleep Quality Index (PSQI); Health-Related Quality of Life SF-36 V2 (HRQoL SF-36 V2); Hospital Anxiety and Depression Scale (HADS); Multidimensional Health Locus of Control (MHLOC) and the Rosenberg Self-Esteem Scale (RSES).; Setting and Participants: Participants were recruited from two distinct community groups, namely CFS/ME (n = 101) and FM (n = 107). Participants were male and female aged 17 (CFS/ME mean age 45.5 years; FM mean age 47.2 years).; Results: All participants in the CFS/ME and FM groups satisfied the requirements of their individual criteria. Results confirmed that both groups experienced the debilitating symptoms measured, with the exception of anxiety and depression, impacting on their quality of life. Results suggest a relationship between CFS/ME and FM, indicating the requirement for future research.; Competing Interests: Conflict of interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article. (© The British Pain Society 2019.)

Access or request full text: <https://libkey.io/10.1177/2049463719875164>

16. [Fibromyalgia and myalgic encephalomyelitis/ chronic fatigue syndrome \(ME/CFS\): interoceptive and inflammatory mechanisms of fatigue and pain expression](#)

Authors: Sharp, H. E.;Themelis, K.;Amato, M. L.;Barritt, A. L.;Davies, K. A.;Harrison, N. A.;Critchley, H. D.;Garfinkel, S. N. and Eccles, J. A.

Publication Date: 2021

Journal: Psychosomatic Medicine 83(7), pp. A53

Abstract: Introduction Fibromyalgia and ME/CFS exhibit heterogenous expression of physical and psychological symptoms, including pain and fatigue, which impact patients' quality of life. Aetiology is poorly understood but may involve altered interoceptive (sensing of internal bodily signals) processes and inflammation. Reports of longer-term fatigue and pain post-COVID infection are increasing worldwide (recently described as 'Post-COVID fatigue syndrome') and could connect with ME/CFS aetiology. Objectives: To investigate how altered interoception relates to baseline expression of pain and fatigue symptoms in fibromyalgia and ME/CFS and in response to an inflammatory challenge. Methods: Sixty-five patients with fibromyalgia and/or ME/CFS diagnosis and 26 matched controls were included. Pressure-pain thresholds and self-report questionnaires assessing pain and fatigue were measured at baseline. Participants received typhoid injections (inflammatory challenge) or saline (placebo) in a randomised, double-blind, crossover design, before completing heartbeat tracking tasks. Three interoception dimensions were measured: subjective sensibility, objective accuracy and metacognitive



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awareness. Interoceptive trait prediction error was calculated as discrepancy between accuracy and sensibility. Results: Patients with fibromyalgia and ME/CFS had significantly higher interoceptive sensibility and trait prediction error, despite comparable interoceptive accuracy. Interoceptive sensibility and trait prediction error correlated with all self-report fatigue and pain measures, and with lower pain thresholds. Following inflammatory challenge, metacognitive awareness correlated with baseline self-reported symptom measures and lower pain thresholds. Conclusions: This is the first study investigating interoception in patients with fibromyalgia and ME/CFS, which were found to be dysregulated and differentially influenced by inflammatory mechanisms. Further understanding of interoception within post-viral symptoms expression could offer mechanistic insights into both ME/CFS and persistent sequela of COVID-19 infection. Interoceptive processes may represent a new potential target for diagnostic and therapeutic intervention to prevent long term post-viral disability.

Access or request full text: <https://libkey.io/10.1097/PSY.0000000000000997>

17. [**The role of interoception in the mechanism of pain and fatigue in fibromyalgia and myalgic encephalomyelitis/chronic fatigue syndrome \(ME/CFS\)**](#)

Authors: Sharp, H.;Themelis, K.;Amato, M.;Barritt, A.;Davies, K.;Harrison, N.;Critchley, H.;Garfinkel, S. and Eccles, J.

Publication Date: 2021

Journal: European Psychiatry 64, pp. S139

Abstract: Introduction Pain, fatigue and anxiety are common features of fibromyalgia and ME/CFS and significantly impact quality of life. Aetiology is poorly defined but dysfunctional inflammatory, autonomic and interoceptive (sensing of internal bodily signals) processes are implicated. Objectives To investigate how altered interoception relates to baseline expression of pain, fatigue and anxiety symptoms in fibromyalgia and ME/CFS and in response to an inflammatory challenge. Methods Sixty-five patients with fibromyalgia and/or ME/CFS diagnosis and 26 matched controls underwent baseline assessment: pressure-pain thresholds and self-report questionnaires assessing pain, fatigue and anxiety severity. Participants received injections of typhoid (inflammatory challenge) or saline (placebo) in a randomised, double-blind, crossover design, before completing heartbeat tracking tasks. Three interoception dimensions were examined: subjective sensibility, objective accuracy and metacognitive awareness. Interoceptive trait prediction error was calculated as discrepancy between accuracy and sensibility. Results Patients with fibromyalgia and ME/CFS had significantly higher interoceptive sensibility and trait prediction error, despite no differences in interoceptive accuracy. Interoceptive sensibility and trait prediction error correlated with all self-report pain, fatigue and anxiety measures, and with lower pain thresholds. Anxiety mediated the positive-predictive relationships between pain (Visual Analogue Scale and Widespread Pain Index), fatigue impact and interoceptive sensibility. After inflammatory challenge, metacognitive awareness correlated with baseline self-reported symptom measures and lower pain thresholds. Conclusions This is the first study investigating interoceptive dimensions in patients with fibromyalgia and ME/CFS, which were found to be dysregulated and differentially influenced by inflammatory mechanisms. Interoceptive processes may represent a new potential target for diagnostic and therapeutic investigation in these poorly understood conditions. Disclosure No significant relationships.

Access or request full text: <https://libkey.io/10.1192/j.eurpsy.2021.382>

18. [**Exploratory study into the relationship between the symptoms of chronic fatigue syndrome \(CFS\)/myalgic encephalomyelitis \(ME\) and fibromyalgia \(FM\) using a quasiexperimental design**](#)

Authors: Walker, Helen;Pamela, G. McKay;Colin, R. Martin and Fleming, Mick

Publication Date: 2021



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Journal: BMJ Open 11(2)

Abstract: Objective To explore the relationship between symptoms of chronic fatigue syndrome (CFS)/myalgic encephalomyelitis (ME) and fibromyalgia (FM). The hypothesis predicated that there would be no significant differences between the group's symptom experience. Design A quasiexperimental design. Structural equation modelling (SEM) and invariance testing. Participants Males (M) and females (F) >16 with a confirmed diagnosis of CFS/ME or FM by a general practitioner or specialist. CFS/ME (n=101, F: n=86, M: n=15, mean (M) age M=45.5 years). FM (n=107, F: n=95, M: n=12, M=47.2 years). Outcome measures Diagnostic criteria: the American Centers for Disease Control and Prevention (CDC) for CFS/ME and the American College of Rheumatology (ACR) criteria for FM. Additional symptom questionnaires measuring: pain, sleep quality, fatigue, quality of life, anxiety and depression, locus of control and self-esteem. Results Invariance was confirmed with the exception of the American CDC Symptom Inventory, Fibromyalgia Impact Questionnaire and Hospital Anxiety and Depression Scale (p

Access or request full text: <https://libkey.io/10.1136/bmjopen-2020-041947>

19. [Pressure Point Thresholds and ME/CFS Comorbidity as Indicators of Patient's Response to Manual Physiotherapy in Fibromyalgia.](#)

Authors: Falaguera-Vera, Francisco Javier; Garcia-Escudero, Maria; Bonastre-Ferez, Javier; Zacaes, Mario and Oltra, Elisa

Publication Date: 2020

Journal: International Journal of Environmental Research & Public Health [Electronic Resource] 17(21), pp. 10 31

Abstract: Current pharmacological treatments of Fibromyalgia (FM) are merely symptom palliative, as clinical trials have so far failed to provide overall benefits without associated harms. Polypharmacy often leads to patient's health deterioration and chronic drug use to an eventual lack of patient's response. Emerging evidence supports that physiotherapy treatments based on mechanical triggers improve FM symptoms and therefore could be used for therapeutic purposes by themselves or in combination with current pharmacological treatments, as part of integrative medicine programs. However, a paucity of studies rigorously and systematically evaluating this possibility exists. This study uses scores from validated standardized questionnaires, algometer pressure point threshold (PPT) readings and responses from a custom self-developed questionnaire to determine the impact of a pressure-controlled custom manual protocol on FM hyperalgesia/allodynia, fatigue and patient's quality of life. The results show that patient's baseline sensitivity to pain inversely correlates with treatment response in FM. Moreover, post-stratification analysis unexpectedly reveals that patients presenting comorbid ME/CFS do not seem to respond to the applied therapy as those presenting FM only. Therefore, pre-treatment PPTs and ME/CFS comorbidity may serve as indicators to predict patient's response to physiotherapy programs based on mechanical triggers. Further exploration of these findings is granted. In addition, the study of gene expression profiles in the blood collection generated by this study should help unveil the molecular mechanisms behind patient's differential response to manual therapy.

Access or request full text: <https://libkey.io/10.3390/ijerph17218044>

20. [Treatment of fibromyalgia probiotics can be a useful therapy in chronic fatigue syndrome patients](#)

Authors: Cusa, C.; Venturini, L.; Capelli, E.; Lorusso, L.; Romeo, M.; Falcone, C. and Ricevuti, G.

Publication Date: 2019

Journal: Clinical and Experimental Rheumatology 37(1), pp. S140

Abstract: Background. CFS/ME is a multisystems condition in which immune functions, mitochondrial function, cardiovascular and endocrine systems are compromised. Objectives. The aim of the present study was to conduct a randomized clinical trial to evaluate the effectiveness of certain combinations of probiotics to modulate immune functions in controlling the symptoms



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of CFS/ME. Methods. 26 subjects with CFS (Fukuda criteria) were randomized for classical and probiotics treatment for 3 months. Four different mixtures of probiotics (Bromatech s.r.l, Milano, Italy) were employed for treatments. Before and after probiotics treatment the fatigue was evaluated with the Chadler Fatigue Scale, Pain with the VAS scale, Frailty with the SHARE-FI, the Health Forms and the Quality of Life with the SF-36, the assessment of psychological status with Beck Depression Inventory scale (BDI-II), Oxidative stress with the DROMS test of the Diacron company. Results. Considering the clinical features, after probiotic therapy we observed an improvement of the subjective state of health and of the indices of quality of life; a decreased of physical and mental fatigue and an improved mood were also observed. DROMS test showed an improvement of oxidative stress. Conclusion. Probiotic therapy seems to be useful in the treatment of patients with Chronic Fatigue syndrome. Probiotics Treatment may be practicable and safe.

URL: <https://www.cochranelibrary.com/central/doi/10.1002/central/CN-01996255/full>

21. [Varied Presentation of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome and the Needs for Classification and Clinician Education: A Case Series.](#)

Authors: Martin-Martinez, Eva and Martin-Martinez, Mercedes

Publication Date: 2019

Journal: Clinical Therapeutics 41(4), pp. 619–624

Abstract: Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) is a complex, heterogeneous and serious disease. In this article, we analyze the cases of 3 patients with ME/CFS. Due to the disbeliefs, misconceptions, and stigmas that are attached to ME/CFS, patient diagnosis is made after years of disease progression. Over this period, physicians tried to determine the etiology of the disease, taking into account its onset and symptoms. The suspected conditions correlated with possible subgroups that researchers speculate may exist in ME/CFS. Therefore, a registry of well-selected data on clinical history could help to cluster patients into more homogenous groups, and could be beneficial for research. Copyright © 2019. Published by Elsevier Inc.

Access or request full text: <https://libkey.io/10.1016/j.clinthera.2019.02.014>

22. [The role of autonomic dysfunction and responses of inflammation to mood, pain, fatigue, and autonomic function in fm and ME/CFS](#)

Authors: Themelis, K.;Stocks, R. A.;Shah-Goodwin, L.;Cipinova, Z. C.;Barritt, A. W.;Critchley, H. D.;Davies, K. D.;Harrison, N. A. and Eccles, J. A.

Publication Date: 2019

Journal: Psychosomatic Medicine 81(4), pp. A149-A150

Abstract: Background Symptoms of dysautonomia and inflammation have been described in Fibromyalgia (FM) and Myalgic encephalomyelitis (ME)/Chronic Fatigue Syndrome (CFS). This ongoing study investigates, for the first time, how a sympathetically mediated challenge and induced systemic inflammatory state impact on mood, pain, fatigue, and autonomic function. Methods In a randomised, double-blind, placebo-controlled study, 15 participants with FM and/or ME/CFS underwent an autonomic- and inflammatory challenge during 3 visits. Outcome measures included a range of questionnaires, measures of heart rate (HR), Pressure Pain Threshold (PPT), alongside subjective pain and fatigue measures. Autonomic function was assessed using a passive non-invasive tilt-test (upright tilt of 60°) and active-stand (AS) with beat-to-beat HR and blood pressure monitoring. Remaining visits involved an inflammatory challenge using intramuscular typhoid- and saline (placebo) injection. Results Tilt-table test was positive in 50% participants and AS in all 15 participants indicated by HR rise >30 bpm and a sustained HR of 120 bpm. Fatigue Severity Scale scores were positively correlated with peak HR during AS ($r=.649, p=.009, n=15$). Profile of Mood States between tilt and AS correlated with HR change. Overall and physical fatigue correlated with HR change during AS (all= $r>.517, p<.558, p-$





.558, $p < .05$, $n = 15$). PPT change under typhoid and saline correlated with HR change during 3 min tilt ($r = -.689$, $p = .027$, $n = 10$). PPT change during tilt correlated with PPT change and overall fatigue after typhoid ($r = .624$, $p < .05$, $n = 13$). Conclusion Preliminary findings suggest that dysautonomia and induced inflammation significantly impacts on pain, fatigue, and autonomic function in FM and ME/CFS. On-going data collection of 100 participants (25 controls) will allow extended analyses to test how autonomic function and inflammation affect symptom domains that impact on quality of life.

Access or request full text: <https://libkey.io/10.1097/PSY.0000000000000699>

23. [**Comorbidity in Chronic Fatigue Syndrome/Myalgic Encephalomyelitis: A Nationwide Population-Based Cohort Study.**](#)

Authors: Castro-Marrero, Jesus;Faro, Monica;Aliste, Luisa;Saez-Francas, Naia;Calvo, Natalia;Martinez-Martinez, Alba;de Sevilla, Tomas Fernandez and Alegre, Jose

Publication Date: Sep ,2017

Journal: Psychosomatics 58(5), pp. 533–543

Abstract: BACKGROUND: Previous studies have shown evidence of comorbid conditions in chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME). **OBJECTIVE:** To estimate the prevalence of comorbidities and assess their associations using a nationwide population-based database of a Spanish CFS/ME cohort. **METHOD:** A nationally representative, retrospective, cross-sectional cohort study (2008-2015) assessed 1757 Spanish subjects who met both the 1994 Centers for Disease Control and Prevention/Fukuda definition and 2003 Canadian Criteria for CFS/ME. Sociodemographic and clinical data, comorbidities, and patient-reported outcome measures at baseline were recorded. A cluster analysis based on baseline clinical variables was performed to classify patients with CFS/ME into 5 categories according to comorbidities. A multivariate logistic regression analysis was conducted adjusting for potential confounding effects such as age and sex; response and categorical predictor variables were also assessed. **RESULTS:** A total of 1757 CFS/ME patients completed surveys were collected. We identified 5 CFS/ME clusters: group 1-fibromyalgia, myofascial pain, multiple chemical hypersensitivity, sicca syndrome, epicondylitis, and thyroiditis; group 2-alterations of ligaments and subcutaneous tissue, hypovitaminosis D, psychopathology, ligamentous hyperlaxity, and endometriosis. These 2 subgroups comprised mainly older women, with low educational level, unemployment, high levels of fatigue, and poor quality of life; group 3-with hardly any comorbidities, comprising mainly younger women, university students or those already employed, with lower levels of fatigue, and better quality of life; group 4-poorly defined comorbidities; and group 5-hypercholesterolemia. **CONCLUSION:** Over 80% of a large population-based cohort of Spanish patients with CFS/ME presented comorbidities. Among the 5 subgroups created, the most interesting were groups 1-3. Future research should consider multidisciplinary approaches for the management and treatment of CFS/ME with comorbid conditions. Copyright © 2017 The Academy of Psychosomatic Medicine. Published by Elsevier Inc. All rights reserved.

Access or request full text: <https://libkey.io/10.1016/j.psych.2017.04.010>

24. [**What is in a name? Comparing diagnostic criteria for chronic fatigue syndrome with or without fibromyalgia.**](#)

Authors: Meeus, Mira;Ickmans, Kelly;Struyf, Filip;Kos, Daphne;Lambrecht, Luc;Willekens, Barbara;Cras, Patrick and Nijs, Jo

Publication Date: Jan ,2016

Journal: Clinical Rheumatology 35(1), pp. 191–203

Abstract: The current study had two objectives. (1) to compare objective and self-report measures in patients with chronic fatigue syndrome (CFS) according to the 1994 Center for Disease Control (CDC) criteria, patients with multiple sclerosis (MS), and healthy controls, and (2) to contrast CFS patients who only fulfill CDC criteria to those who also fulfill the criteria for



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myalgic encephalomyelitis (ME), the 2003 Canadian criteria for ME/CFS, or the comorbid diagnosis of fibromyalgia (FM). One hundred six participants (48 CFS patients diagnosed following the 1994 CDC criteria, 19 MS patients, and 39 healthy controls) completed questionnaires assessing symptom severity, quality of life, daily functioning, and psychological factors. Objective measures consisted of activity monitoring, evaluation of maximal voluntary contraction and muscle recovery, and cognitive performance. CFS patients were screened whether they also fulfilled ME criteria, the Canadian criteria, and the diagnosis of FM. CFS patients scored higher on symptom severity, lower on quality of life, and higher on depression and kinesiophobia and worse on MVC, muscle recovery, and cognitive performance compared to the MS patients and the healthy subjects. Daily activity levels were also lower compared to healthy subjects. Only one difference was found between those fulfilling the ME criteria and those who did not regarding the degree of kinesiophobia (lower in ME), while comorbidity for FM significantly increased the symptom burden. CFS patients report more severe symptoms and are more disabled compared to MS patients and healthy controls. Based on the present study, fulfillment of the ME or Canadian criteria did not seem to give a clinically different picture, whereas a diagnosis of comorbid FM selected symptomatically worse and more disabled patients.

Access or request full text: <https://libkey.io/10.1007/s10067-014-2793-x>

25. [Associations Between Cognitive Performance and Pain in Chronic Fatigue Syndrome: Comorbidity with Fibromyalgia Does Matter.](#)

Authors: Ickmans, Kelly;Meeus, Mira;De Koning, Margot;Lambrecht, Luc;Pattyn, Nathalie and Nijs, Jo

Publication Date: 2015

Journal: Pain Physician 18(5), pp. 841

Abstract: BACKGROUND: In addition to the frequently reported pain complaints, performance-based cognitive capabilities in patients with chronic fatigue syndrome (CFS) with and without comorbid fibromyalgia (FM) are significantly worse than those of healthy controls. In various chronic pain populations, cognitive impairments are known to be related to pain severity. However, to the best of our knowledge, the association between cognitive performance and experimental pain measurements has never been examined in CFS patients. **OBJECTIVES:** This study aimed to examine the association between cognitive performance and self-reported as well as experimental pain measurements in CFS patients with and without FM. **STUDY DESIGN:** Observational study. **SETTING:** The present study took place at the Vrije Universiteit Brussel and the University of Antwerp. **METHODS:** Forty-eight (18 CFS-only and 30 CFS+FM) patients and 30 healthy controls were studied. Participants first completed 3 performance-based cognitive tests designed to assess selective and sustained attention, cognitive inhibition, and working memory capacity. Seven days later, experimental pain measurements (pressure pain thresholds [PPT], temporal summation [TS], and conditioned pain modulation [CPM]) took place and participants were asked to fill out 3 questionnaires to assess self-reported pain, fatigue, and depressive symptoms. **RESULTS:** In the CFS+FM group, the capacity of pain inhibition was significantly associated with cognitive inhibition. Self-reported pain was significantly associated with simple reaction time in CFS-only patients. The CFS+FM but not the CFS-only group showed a significantly lower PPT and enhanced TS compared with controls. **LIMITATIONS:** The cross-sectional nature of this study does not allow for inferences of causation. **CONCLUSIONS:** The results underline disease heterogeneity in CFS by indicating that a measure of endogenous pain inhibition might be a significant predictor of cognitive functioning in CFS patients with FM, while self-reported pain appears more appropriate to predict cognitive functioning in CFS patients without FM.

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DATABASES AND INFORMATION SOURCES USED					
	Pubmed		HMIC	X	BMJ Best Practice
X	Medline		Social Policy and Practice	X	Cochrane Library
	Emcare	X	CINAHL		TRIP
	Embase		PsycINFO	X	Grey Literature
	AMED	X	UpToDate	X	Other – Google Advanced

PURPOSE OF SEARCH			
	Patient info/health & well being	X	Clinical decision making (inc. patient care)
	Executive Team support		Research/Education/Professional development
X	Quality Improvement		Primary Care & Neighbourhoods Directorate support
	KM/Management decision making		Other

USER CATEGORY OF REQUESTOR			
	Medical students		Patients/public
X	Nursing/midwifery students		Physician Associates
	Doctor/Psychiatrist		Public Health (Somerset CC)
	Nurses/Midwives		Other
	Allied Health professionals		

HAS PERMISSION TO SHARE THE RESULTS BEEN OBTAINED FROM THE REQUESTOR?			
X	YES - share		NO – do not share



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KEY WORDS/SEARCH STRATEGY INCLUDING MESH HEADINGS	LIMITS USED
<p>Ovid MEDLINE(R) ALL <1946 to March 19, 2025></p> <p>1 exp Fatigue Syndrome, Chronic/6503</p> <p>2 (Chronic Fatigue Syndrome or CFS).mp. 13966</p> <p>3 1 or 2 15353</p> <p>4 (ME or myalgic Encephalomyelitis).mp. 66364</p> <p>5 3 or 4 79594</p> <p>6 Fibromyalgia/ 10661</p> <p>7 (fibromyalgia or fibromyalgia syndrome or FM or FMS).mp. 50408</p> <p>8 6 or 7 50408</p> <p>9 5 and 8 1289</p> <p>10 exp Comorbidity/ 133607</p> <p>11 (dual diagnosis or comorbid* or codiagnosis or chronic overlapping pain condition*).mp. 349910</p> <p>12 10 or 11 352858</p> <p>13 9 and 12 236</p> <p>14 limit 13 to yr="2015 -Current" 107</p>	

