

# Fibromyalgia: Deciphering a Clinical Enigma

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## Introduction

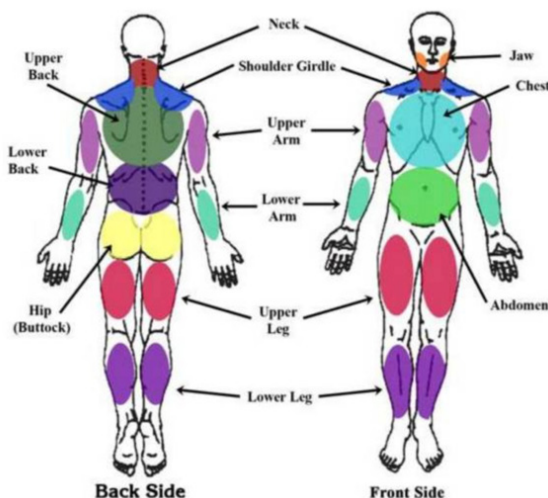
Fibromyalgia (FM) is one of the most prevalent rheumatologic diseases, affecting millions of individuals worldwide. It is primarily characterized by chronic and widespread musculoskeletal pain, often accompanied by other debilitating symptoms such as persistent fatigue, sleep disturbances, morning stiffness, paresthesias in the extremities, sensations of edema, sleep disturbance and impairments in cognition and functionality, with more heterogeneity and diagnostic complexity.<sup>1,2</sup>

## Etiology and physiopathology

Despite extensive research, its etiology and pathophysiology remain incompletely understood. The “top-down” hypothesis emphasizes central nervous system dysregulation leading to amplified pain perception, whereas the “bottom-up” hypothesis focuses on persistent peripheral nociceptive input that contributes to central sensitization.<sup>3</sup>

## Epidemiology

Population studies demonstrate that the modified 2016 American College of Rheumatology (ACR) criteria (based on Widespread Pain Index (WPI) – Figure 1) result in a prevalence of approximately 3.4% (95% CI 2.7-4.3).<sup>4</sup> Using the AAPT Criteria (Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks - American Pain Society Pain Taxonomy – Figure 2), which tend to diagnose more cases by focusing on a different set of symptoms, the prevalence found in comparative studies can rise to about 5.7% (95% CI 4.8-6.8).<sup>4</sup> In Brazil, FM is the second most common rheumatologic condition, surpassed only by osteoarthritis, with an estimated prevalence ranging between 2.5% and 5.5%.<sup>1,5</sup>



**Figure 1** Body areas included in the Widespread Pain Index (WPI) scale of 2016 FMS ACR diagnosis criteria.

## Fibromyalgia diagnostic worksheet

### Symptom severity scale (SSS)

Have your problems with the symptoms below been present for 3 months or more?  Yes  No  
If yes, using the following scale, indicate the severity of each symptom over the past week by circling the appropriate number.

	No problem	Mild	Moderate	Severe
Fatigue	0	1	2	3
Trouble thinking or remembering	0	1	2	3
Waking up tired (unrefreshed)	0	1	2	3

During the past 6 months, have you had any of the following symptoms?

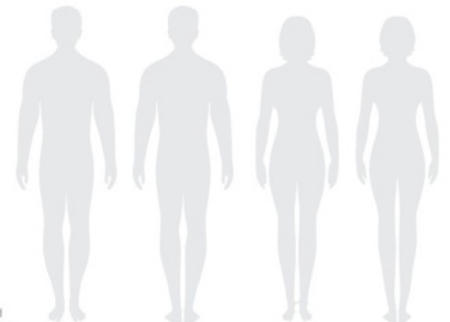
Pain or cramps in lower abdomen  Yes  No  
Depression  Yes  No  
Headache  Yes  No

Total score\* for the SSS \_\_\_\_\_

\*The sum of the three scaled symptoms plus one point each for the other symptoms (pain or cramps, depression, headache). The total will be between 0 and 12.

### Body map

Use the figures to record where pain occurs in detail. Shade the areas of your body where you have felt persistent or recurrent pain for the past 3 months or longer (chronic pain).



### Calculating the WPI score

Use this checklist to calculate the widespread pain index (WPI) score. Tick the areas where you have had chronic pain for 3 months or longer.

- |  |   |   |  |  |
|--|---|---|--|--|
| <b>Region 1: left upper</b><br><input type="checkbox"/> L jaw<br><input type="checkbox"/> L shoulder girdle<br><input type="checkbox"/> L upper arm<br><input type="checkbox"/> L lower arm and/or L wrist/hand, L elbow | <b>Region 2: right upper</b><br><input type="checkbox"/> R jaw<br><input type="checkbox"/> R shoulder girdle<br><input type="checkbox"/> R upper arm<br><input type="checkbox"/> R lower arm and/or R wrist/hand, R elbow | <b>Region 3: left lower</b><br><input type="checkbox"/> L hip and/or L buttock<br><input type="checkbox"/> L upper leg and/or L groin<br><input type="checkbox"/> L lower leg and/or L ankle/foot, L knee | <b>Region 4: right lower</b><br><input type="checkbox"/> R hip and/or R buttock<br><input type="checkbox"/> R upper leg and/or R groin<br><input type="checkbox"/> R lower leg and/or R ankle/foot, R knee | <b>Region 5: axial</b><br><input type="checkbox"/> Neck<br><input type="checkbox"/> Upper back<br><input type="checkbox"/> Lower back<br><input type="checkbox"/> Chest (L and/or R)<br><input type="checkbox"/> Abdomen |
|--|---|---|--|--|

Total score\* for the WPI \_\_\_\_\_

\*The total will be between 0 and 19.  
L=left, R=right

A diagnosis requires widespread pain > 3 months duration with currently either i) widespread pain index (WPI) ≥ 7 and symptom severity scale (SSS) score ≥ 5, or ii) WPI 4–6 and SSS score ≥ 9, with pain in 4/5 body regions (see text).

Acknowledgements  
ACR 2016 criteria reprinted from Wally F et al. 2016 Revisions to the 2010/2011 fibromyalgia diagnostic criteria. *Semin Arthritis Rheum* 2016;46:319–329 with permission from Elsevier.  
The design of the worksheet was inspired by the Michigan body map: <https://medlineplus.gov/healthtools/healthtoolsresearch/michigan-body-map.html>

**Figure 2** Fibromyalgia Diagnosis Worksheet by Royal College of Physicians, 2022.

The prevalence is higher in women, but population studies show that up to 60% of cases may occur in women, not the

90% traditionally reported in clinical samples.<sup>6</sup> In older adults, fibromyalgia is recognized, but it may be underdiagnosed due to overlapping symptoms with other diseases. The prevalence tends to be similar to that in adults, but may be higher in patients with multiple comorbidities.<sup>7</sup> Juvenile Primary Fibromyalgia Syndrome (JPFS) is a chronic pain condition with an estimated prevalence of 1.2% to 6.2% in children and adolescents.<sup>8</sup>

### Clinical presentation

A systematic review concluded that, among these domains and their subdomains, the most frequently assessed in FM clinical trials since 2015 were: pain (98%), depression (98%), fatigue (96%), anxiety (95%), physical limitation (95%), general health (88%), social participation (86%), sleep disorders (85%), and stiffness (82%).<sup>9</sup> Fatigue, sleep disorders, and mood disorders appear to be independent risk factors for the onset or exacerbation of generalized chronic pain.<sup>10</sup>

Some comorbidities are highly associated with fibromyalgia, such as depression, anxiety, chronic fatigue syndrome, myofascial pain syndrome, irritable bowel syndrome, and nonspecific urethral syndrome. Additional frequently co-occurring conditions are temporomandibular pain, vulvodynia, interstitial cystitis, endometriosis, chronic tension headaches, migraine headaches, chronic low back pain, restless legs syndrome, bipolar disorder, and substance use disorder. The American Academy of Family Physicians notes that more than half of patients with fibromyalgia experience depression, and psychiatric comorbidities are common, including generalized anxiety and bipolar disorder. Chronic overlapping pain conditions are also prevalent, reflecting a spectrum of functional somatic syndromes.<sup>1</sup>

### Diagnostic criteria

The diagnostic criteria currently used for fibromyalgia are the 2010, 2011, and 2016 revised ACR criteria, as well as the 2019 AAPT criteria. The 2016 ACR criteria require widespread pain in at least four of five regions for at least three months, in addition to a minimum score on the Widespread Pain Index (WPI) and the Symptom Severity Scale (SSS), which assess the extent of pain and the severity of symptoms such as fatigue, non-restorative sleep, and cognitive changes.<sup>4</sup> According to the 2016 revisions, the WPI score is 4, provided the SSS score is 9 or higher. Alternatively, a patient can meet the criteria with a WPI of 7 and an SSS score of 5.<sup>4</sup> The 2019 AAPT criteria require pain in at least six of nine anatomical regions, associated with moderate to severe fatigue or sleep disturbances, for at least three months.<sup>4</sup>

The accuracy of the criteria is high: the 2011 and 2016 ACR criteria have sensitivity between 78% and 86% and specificity between 90% and 91.7% compared to the clinical diagnosis of specialists.<sup>11</sup> The AAPT criteria have slightly lower sensitivity (73.8% to 74%) and similar specificity (91.7%).<sup>1</sup> The combined use of WPI and SSS increases discriminatory capacity, with correct classification accuracy between 81.8% and 85.1%.<sup>1</sup>

### Treatment

The main targets of individualized and multimodal treatment for fibromyalgia are generalized pain, fatigue, sleep disturbances, hypersensitivity to palpation, cognitive changes, mood changes, and obesity. The American Academy of Family Physicians and the European League Against Rheumatism recommend a multidisciplinary approach, prioritizing non-pharmacological interventions, justifying that these strategies improve core symptoms and reduce the risk of adverse effects.<sup>11</sup>

Moderate-intensity aerobic exercise is the non-pharmacological intervention with the strongest evidence, providing improvement in pain, physical function, fatigue, and sleep quality. Exercise should be initiated at low intensity and frequency, gradually increasing as tolerated.<sup>11</sup> Cognitive-behavioral therapy (CBT) is recommended to modulate negative thoughts and behaviors, with evidence of modest improvement in pain and disability in the short and medium term.<sup>11</sup> Patient education is fundamental to promoting adherence to treatment and managing expectations.<sup>11</sup>

When non-pharmacological measures are insufficient, the American Academy of Family Physicians recommends starting with a low-dose medication, gradually increasing the dose. Options with evidence of efficacy include amitriptyline, duloxetine, milnacipran and pregabalin, all FDA-approved in the US for fibromyalgia.<sup>1,12,13</sup> These medications primarily work by reducing pain, with some also improving fatigue, sleep, and cognition.<sup>1,12,13</sup>

Cyclobenzaprine can be used as an off-label option.<sup>13</sup> Opioids are not recommended due to the risk of dependence, low efficacy, and potential to worsen hyperalgesia.<sup>11</sup> Other drugs as venlafaxine, mirtazapine, memantine and many other are being studied with no consistent results.<sup>13</sup>

Cannabis shows inconsistency in the analysis of published studies.<sup>14</sup> The American College of Physicians and the Canadian Rheumatology Association advise against the use of cannabis as a first-line treatment for chronic pain, including fibromyalgia, due to limited evidence and known risks.<sup>15</sup> Intravenous lidocaine or ketamine lack robust clinical evidence for sustained symptom improvement in fibromyalgia and are not recommended as standard treatment by major international societies.<sup>16</sup>

There is no universally accepted formal definition of refractoriness in fibromyalgia in the medical literature. However, the concept generally refers to persistent symptoms despite adequate trials of multiple pharmacological agents from different classes (such as duloxetine, milnacipran, pregabalin, and low-dose tricyclic antidepressants) and at least two evidence-based non-pharmacological interventions (such as aerobic exercise and cognitive behavioral therapy), after a careful review and confirmation of the diagnosis and exclusion of factors that may interfere with treatment response, including psychiatric comorbidities, inappropriate medication use, and psychosocial factors.<sup>17</sup>

### Conclusion

Fibromyalgia remains a complex and challenging condition for clinicians, characterized by significant heterogeneity in clinical presentation and the absence of objective diagnostic biomarkers. Despite advances in diagnostic criteria—from the 1990 ACR tender point-based classification to the 2011/2016 ACR revisions and the 2019 AAPT criteria—the diagnosis continues to rely on clinical assessment and exclusion of other conditions, contributing to under-, over-, and misdiagnosis in clinical practice. The overlap with other chronic pain syndromes, psychiatric comorbidities, and functional somatic disorders further complicates accurate case identification and timely intervention.

From a therapeutic standpoint, no single treatment provides satisfactory relief for all patients. Pharmacological options offer clinically meaningful benefit in only a minority of patients, and adverse effects frequently limit adherence. Non-pharmacological interventions—particularly aerobic exercise, cognitive behavioral therapy, and patient education—are recommended as first-line strategies

by international guidelines, yet real-world access remains limited by scarcity of trained therapists, referral barriers, and costs. The modest effect sizes observed for most interventions underscore the need for individualized, multimodal treatment plans tailored to each patient's predominant symptoms and comorbidities.

Future directions in fibromyalgia research include the validation of objective biomarkers (genetic, epigenetic, proteomic, and metabolic signatures), integration of multi-omics with clinical phenotyping, and development of precision-guided therapeutic trials. Until these advances translate into clinical practice, the management of fibromyalgia will continue to demand a comprehensive, patient-centered, and multidisciplinary approach, with ongoing reassessment of diagnosis and treatment response.

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None.

## Conflicts of interest

The authors declare that there are no conflicts of interest.

## References

1. Winslow BT, Vandal C, Dang L. Fibromyalgia: diagnosis and management. *Am Fam Physician*. 2023;107(2):137–144.
2. Senna ER, De Barros AL, Silva EO, et al. Prevalence of rheumatic diseases in Brazil: a study using the COPCORD approach. *J Rheumatol*. 2004;31(3):594–597.
3. Schrepf A, Moser S, Harte SE, et al. Top down or bottom up? An observational investigation of improvement in fibromyalgia symptoms following hip and knee replacement. *Rheumatology*. 2019;59(3):594–602.
4. Häuser W, Brähler E, Ablin J, et al. Modified 2016 American College of Rheumatology Fibromyalgia Criteria, the Analgesic, Anesthetic, and Addiction Clinical Trial Translations Innovations Opportunities and Networks-American Pain Society Pain Taxonomy, and the Prevalence of Fibromyalgia. *Arthritis Care Res (Hoboken)*. 2021 May;73(5):617–625.
5. Sarzi-Puttini P, Giorgi V, Marotto D, et al. Fibromyalgia: an update on clinical characteristics, aetiopathogenesis and treatment. *Nature Reviews Rheumatology [Internet]*. 2020;16(11):645–660.
6. Ruschak I, Montesó-Curto P, Rosselló L, et al. Fibromyalgia syndrome pain in men and women: a scoping review. *Healthcare*. 2023;11(2):223.
7. Ribeiro ÁAR, Braga CHM, Medeiros IS, et al. Approaches and challenges in the interdisciplinary management of chronic pain in elderly patients with fibromyalgia in primary health care: a literature review. *CONTRIBUCIONES A LAS CIENCIAS SOCIALES*. 2025;18(12):e22645.
8. Heymann RE, Rezende MC, Braz AdS et al. Brazilian Society of Rheumatology's fibromyalgia treatment guidelines – part I: monitoring and non-pharmacological management. *Adv Rheumatol*. 2026;66(1).
9. Kleymamp BA, Ferguson MC, McNicol E, et al. The prevalence of psychiatric and chronic pain comorbidities in fibromyalgia: an action systematic review. *Semin Arthritis Rheum*. 2021;51(1):166–174.
10. Salaffi F, Di Carlo M, Farah S, et al. Diagnosis of fibromyalgia: comparison of the 2011/2016 ACR and AAPT criteria and validation of the modified Fibromyalgia Assessment Status. *Rheumatology (Oxford)*. 2020;59(10):3042–3049.
11. Downen SS, Farag HM, Davies A, et al. Cost-effectiveness of pregabalin, duloxetine, and milnacipran vs amitriptyline for moderate to severe fibromyalgia. *JAMA Network Open*. 2026;9(2):e2557536.
12. Li Y, Li Y, Wu S, et al. Pharmacologic treatment of fibromyalgia: an update. *Frontiers in Pharmacology*. 2025;16:1651181–1181.
13. Walitt B, Klose P, Fitzcharles MA, et al. Cannabinoids for fibromyalgia. *Cochrane Database of Syst Rev*. 2016;7(7):CD011694
14. Zhai X, Sarkar PR, Hill KP. Therapeutic use of cannabis and cannabinoids: benefits and risks. *Pol Arch Intern Med*. 2025;135(11):17117.
15. Orhurhu V, Orhurhu MS, Bhatia A, et al. Ketamine infusions for chronic pain. *Anesth Analg*. 2019;129(1):241–254.
16. Vidal LF, Messina O, Rodríguez T, et al. Refractory fibromyalgia. *Clinical Rheumatology*. 2021;40(9):3853–3858.