

FIBROMYALGIA, AN INTEGRAL LOOK AT A COMPLEX DISEASEMaria San Miguel, Daniel Garcia-Moreno¹, Angel San Miguel^{2*} and Inglada Galiana³¹Health Center. Ribera del Orbigo. León. Spain.²Clinical Analysis Service. Rio Hortega Valladolid University Hospital. Valladolid. Professor International University of La Rioja (UNIR). Spain.³Servicio de Servicio de Medicina Interna. Rio Hortega Valladolid University Hospital. Valladolid. Spain.***Corresponding Author: Angel San Miguel**

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ABSTRACT

Fibromyalgia is a chronic disease that affects millions of people around the world. It is characterized by widespread pain, fatigue, sleep disturbances, and other symptoms that can significantly affect the quality of life of patients. Although the exact cause of fibromyalgia is not known, it is believed that genetic, neurochemical, and environmental factors may play a role in its development. The diagnosis of FM can be challenging, since there are no specific tests to confirm its presence. Doctors often rely on evaluating symptoms and excluding other medical conditions to reach a diagnosis. Treatment focuses on relieving symptoms and improving the quality of life of patients. This may include the use of pain medications, physical therapies, cognitive behavioral therapies, and lifestyle changes. Fibromyalgia can have a significant impact on the quality of life of patients. It can limit the ability to perform daily activities, affect personal relationships, lead to mental health problems, and make it difficult to take care of yourself and overall well-being. However, as the understanding of the disease progresses, it is expected that better diagnostic methods and more effective treatments will be developed. Ongoing fibromyalgia research is focused on better understanding the underlying causes of the disease, identifying specific biomarkers, developing innovative therapies, and promoting a multidisciplinary approach to its management. As new knowledge is gained and more effective approaches are implemented, it is expected that the quality of life of fibromyalgia patients will improve and the disease burden will be reduced. In this article, we explore FM further, from diagnostic criteria and associated symptoms, to treatment options and the impact on patients quality of life. In addition, we will examine current and future research in the field, hoping to improve understanding of this complex disease and find better approaches to symptom management and relief.

KEYWORDS: Fibromyalgia, symptoms, treatment.**INTRODUCTION**

Fibromyalgia (FM) is a chronic disease that affects a large number of people around the world. It is estimated that between 2-4% of the adult population suffers from fibromyalgia, which makes it one of the most common rheumatological conditions. Although it has been recognized as a disease for decades, it still poses significant challenges in terms of accurate diagnosis, understanding of its underlying causes, and effective treatment.^[1-5]

This is characterized by widespread and chronic musculoskeletal pain, along with a wide range of additional symptoms that vary from person to person. It is often described as a deep, shooting, or burning pain that occurs throughout the body and may be accompanied by tenderness at specific points known as

trigger points. These points, when pressed, can lead to increased pain and tenderness in the surrounding area.^[6,7]

In addition to pain, FM comes with other debilitating symptoms. Patients often experience extreme fatigue that is not relieved by rest, which can make daily activities difficult and limit the ability to work or participate in social activities. Sleep disturbances are common, leading to insomnia, difficulty falling asleep, or frequent awakenings during the night. Cognitive problems, often referred to as "brain fog" include difficulties with concentration, memory, and information processing, which can affect work performance and daily life.^[8-10]

Although the exact cause of FM is not yet fully understood, a combination of genetic, neurochemical, and environmental factors have been proposed as possible triggers for the disease. Research suggests that

changes in the way the brain and central nervous system process pain may play a role in the development of fibromyalgia. Likewise, an association with traumatic events, infections, hormonal changes and other factors that may contribute to its appearance has been observed.^[11-14]

The diagnosis can be considered a challenge, since there is no specific test to confirm its presence. It is usually based on the evaluation of symptoms and the exclusion

of other diseases that may cause similar symptoms. It is common for patients to go through a long process of tests and medical consultations before receiving a definitive diagnosis, which can be frustrating and confusing.^[15-18]

Figure 1 summarizes the main risk factors for fibromyalgia.

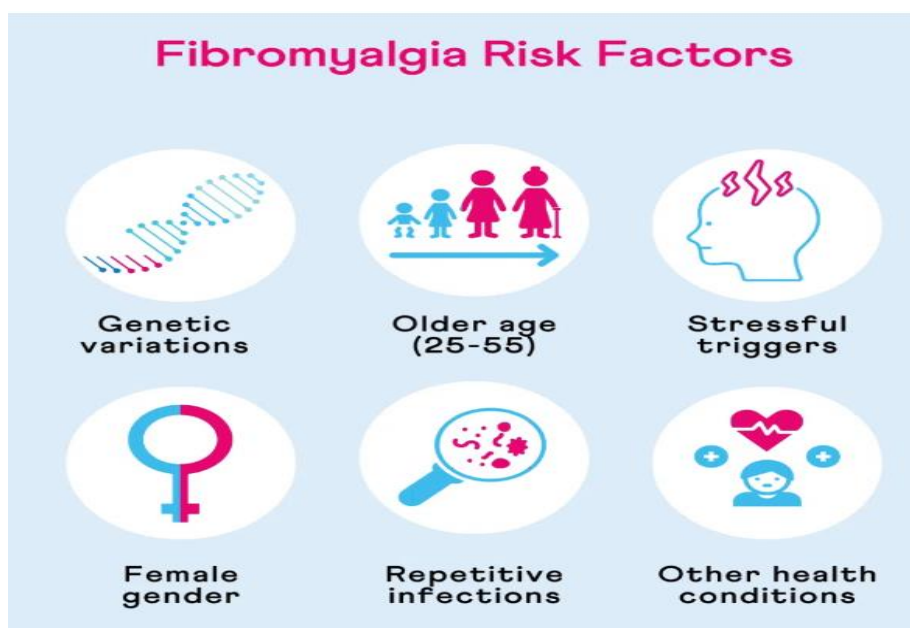


Figure 1. Representation of FM risk factors.

SYMPTOMS AND DIAGNOSIS

FM is characterized by a wide range of symptoms that go beyond generalized musculoskeletal pain. Although chronic pain is the main symptom, there are several other symptoms that are often present in fibromyalgia patients.^[19-23] In addition to generalized pain, patients experience increased sensitivity at certain specific points on the body known as trigger points. These points are usually located in areas such as the neck, shoulders, back, elbows, and knees. Pressure on these points can trigger intense and prolonged pain.

Extreme fatigue is another common symptom in FM. Patients may feel a constant feeling of tiredness and exhaustion, even after periods of adequate rest. This fatigue can significantly interfere with daily activities and limit the ability to carry out physical and mental tasks.^[24,25]

Sleep disturbances are common in fibromyalgia patients. They may experience difficulty falling asleep, frequent awakenings during the night, or unrefreshing sleep. These sleep problems can worsen fatigue and increase feelings of pain. "Brain fog" is a term used to describe the cognitive problems associated with fibromyalgia. Patients may have difficulties with concentration, short-term memory, and information processing abilities. This

can negatively affect the ability to perform everyday tasks, such as following directions, remembering important information, or concentrating on work or school.

In addition to these main symptoms, many FM patients also experience emotional symptoms, such as anxiety and depression. The physical and emotional burden of living with a chronic disease can have a significant impact on patients' quality of life and mental health.^[26-28]

The diagnosis of FM can be complicated due to the lack of specific diagnostic tests. There are no laboratory tests or medical imaging that can confirm the presence of fibromyalgia. It is usually based on a thorough assessment of symptoms and the exclusion of other medical conditions that could cause similar symptoms.

The most widely used diagnostic criteria is the one established by the American College of Rheumatology, which includes the presence of generalized pain in the body for at least three months and the identification of painful trigger points in at least 11 of the 18 designated specific points.^[4,5]

In addition to the clinical evaluation, additional tests may be performed to rule out other medical conditions, such

as laboratory tests to assess thyroid function, blood tests to rule out inflammatory conditions, or other studies depending on the patient's specific symptoms.

In summary, the diagnosis of fibromyalgia is based on the evaluation of symptoms and the exclusion of other

medical conditions. Although there is no single test that can confirm the diagnosis.

In Figure 2, the main symptoms of fibromyalgia are represented.

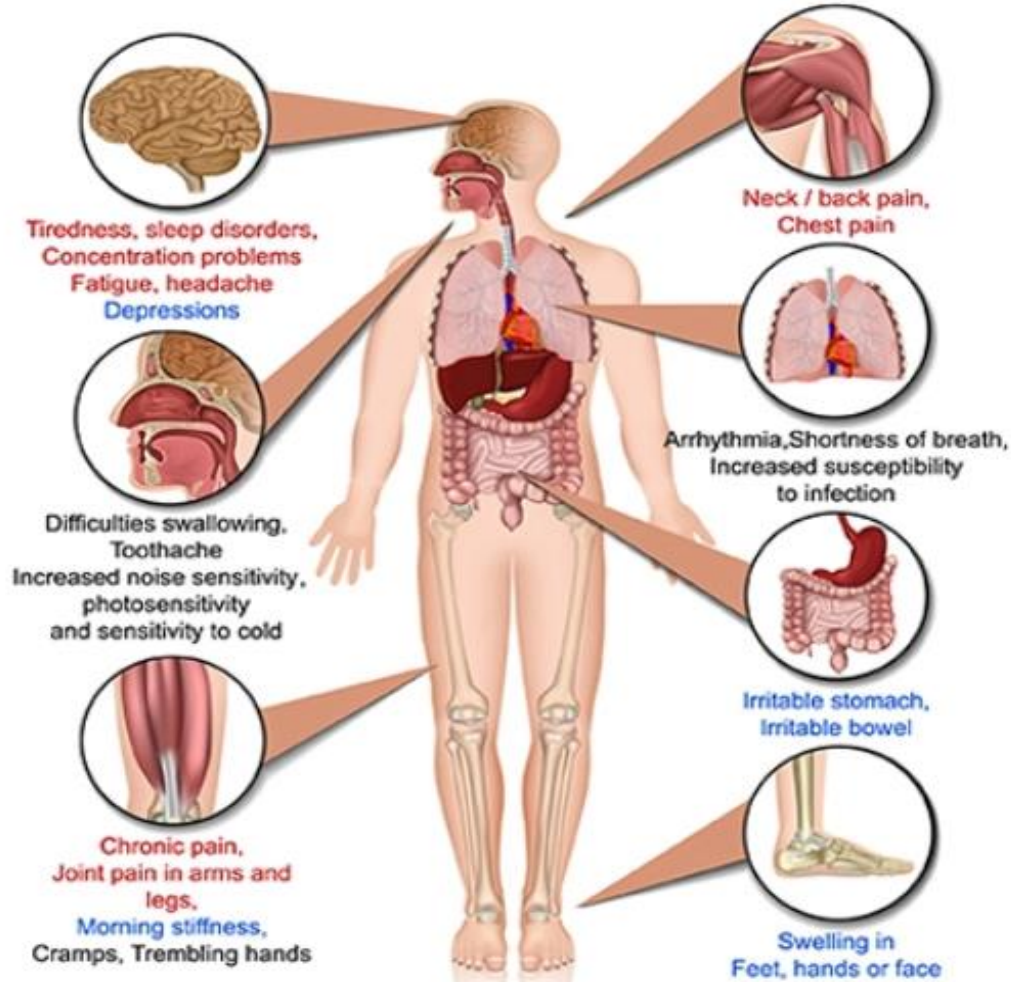


Figure 2: Summary representation of the most important symptoms of fibromyalgia.

TREATMENT

FM treatment is multifaceted and focuses on relieving symptoms, improving quality of life, and promoting physical and emotional function. Since FM is a chronic disease with no definitive cure, the main goal of treatment is to control symptoms and allow patients to lead as active and functional lives as possible (17,29-37).

- **Medications.** Medications are used to control pain, reduce inflammation, and improve sleep quality. Over-the-counter pain relievers, such as acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs), can help relieve mild to moderate pain. However, in more severe cases, prescription medications such as tricyclic antidepressants, anticonvulsants, or muscle relaxants may be necessary to control pain and improve sleep quality.

- **Physical Therapy.** Physical therapy plays an important role in the management of fibromyalgia. Low-impact exercises, such as walking, swimming, or yoga, can help improve muscle strength, reduce stiffness, and relieve pain. Physical therapists may also use manual therapy techniques, such as massage or stretching, to reduce muscle tension and improve mobility.

- **Cognitive-behavioral therapy (CBT).** CBT is used to help patients change their negative thinking and behavior associated with FM. This therapy focuses on identifying and modifying negative thought patterns, as well as developing effective coping strategies to manage pain and improve quality of life. CBT can also help manage anxiety, depression, and stress.

- **Complementary Therapies.** Some complementary therapies, such as acupuncture, massage, hot or cold therapy, and meditation, are used as complementary

approaches to managing fibromyalgia symptoms. These therapies can help reduce pain, promote relaxation, and improve sleep quality. But it is very important to discuss these options with a health professional before starting any complementary therapy.

- **Education and support.** Education about FM is essential for patients to better understand their condition and learn to manage it effectively. Support groups and patient organizations can provide a safe space to share experiences, obtain information, and receive emotional support from others going through similar situations.^[4,9]

It is important to note that fibromyalgia treatment is individualized, as symptoms can vary from person to

person. A comprehensive management approach that combines multiple therapeutic strategies is often more effective than a single approach. Working closely with the medical team and following a personalized treatment plan can help patients manage symptoms and improve their quality of life in the long term.^[5,11]

Figure 3 shows the representation of the distribution of FM pain throughout the body. Non-opioid patients are shown on the left and opioid patients on the right. The different colors indicate the number of patients in each group who reported pain in different areas of the body using the Fibromyalgia Assessment Questionnaire.

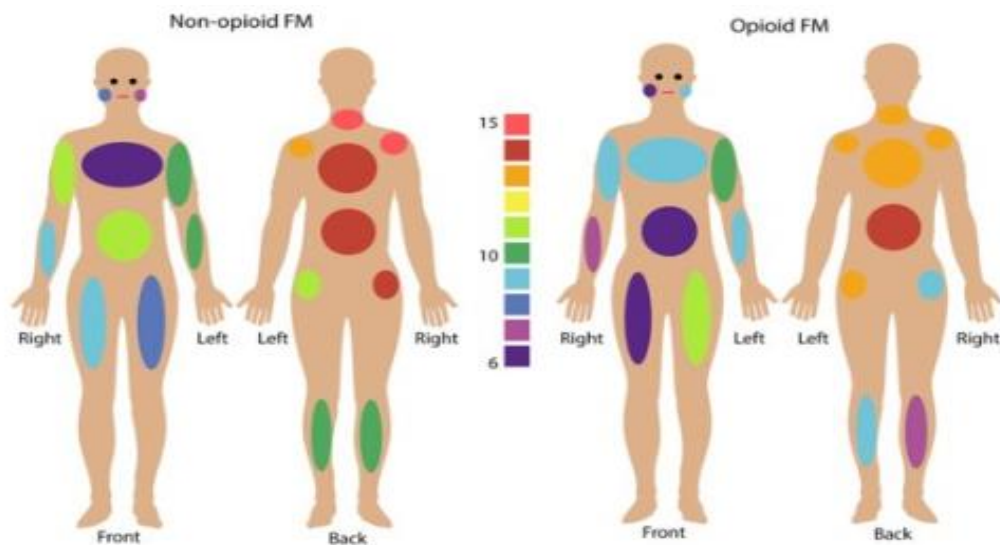


Figure 3: Distribution of fibromyalgia pain throughout the body.

IMPACT ON QUALITY OF LIFE

Fibromyalgia can have a significant impact on the quality of life of those who suffer from it. The debilitating symptoms, chronic pain, and emotional challenges associated with this disease can affect many aspects of daily life and limit physical, social, and work activities. Some of the main aspects that can be affected are.^[33,38-45]

- **Daily activities.** Widespread pain and extreme fatigue can make it difficult to perform daily activities, such as work, household chores, personal care and family responsibilities. Patients may experience difficulty maintaining regular employment due to lack of energy, reduced concentration, and physical limitation. Simple tasks can become challenging and consume more time and effort than usual.

- **Personal relationships.** Fibromyalgia can affect personal and social relationships. Patients may experience limitations in participating in social activities, family gatherings, or social events due to symptoms and the need for rest. Fatigue and chronic pain can also affect intimacy and sexual life, creating difficulties in relationships.

- **Mental Health.** Fibromyalgia symptoms can have a significant impact on mental health. Depression, anxiety, and stress are common in people with fibromyalgia, due to the physical and emotional toll of living with a chronic illness. The constant fight against pain, fatigue and limitation in activities can generate feelings of frustration, sadness and loss of quality of life.

- **Sleep and rest.** Sleep disorders are a common feature of fibromyalgia. Lack of restful sleep and insomnia can worsen fatigue and pain, creating a negative cycle. Lack of adequate sleep can decrease the ability to function during the day, affect mood and ability to concentrate, and decrease overall quality of life.

- **Self-care and well-being.** Fibromyalgia patients often face challenges in maintaining healthy self-care habits. Pain and fatigue can make it difficult to adhere to a regular exercise routine, plan and prepare healthy meals, as well as manage stress and seek activities that promote physical and emotional well-being.

It is important to emphasize that while FM can have a significant impact on quality of life, there are strategies

and approaches that can help patients improve their situation. These include developing a comprehensive and personalized treatment plan, seeking emotional support and education, adopting stress management strategies, and adapting daily activities to conserve energy and avoid overload. Open and honest communication with the medical team and the immediate environment is also essential to receive adequate support.^[39,44]

FUTURE RESEARCH

FM continues to be the subject of research in various fields with the aim of improving the understanding of its causes, finding better diagnostic methods and developing more effective treatments. Some research areas include.^[4,5,33,46-47]

- **Underlying causes.** Despite advances in research, the exact causes of fibromyalgia remain unclear. Studies are ongoing to better understand the genetic, neurochemical, immunological, and environmental factors that could contribute to the development of the disease. These investigations could help to identify more specific and personalized therapeutic targets.

- **Biomarkers.** Research is underway to identify fibromyalgia-specific biomarkers, which are measurable and objective indicators of the presence or progression of the disease. These biomarkers could be used to improve early diagnosis, monitor treatment efficacy, and develop more targeted therapies.

- **More effective treatments.** There is a continuing need to develop more effective treatments for fibromyalgia.

New pharmacological options are being investigated, such as drugs that target neurotransmitter systems and pain mechanisms in the brain and central nervous system. In addition, non-pharmacological therapies, such as transcranial magnetic stimulation, transcutaneous electrical nerve stimulation (TENS), and virtual reality, are being explored as potential complementary or alternative interventions.

- **Innovative therapies.** Innovative therapies are being studied in the field of fibromyalgia, such as stem cell therapy and implantable electrical nerve stimulation therapy. These therapies aim to modulate the response of the nervous system and reduce chronic pain in patients.

- **Multidisciplinary Approach:** Research is also focusing on the importance of a multidisciplinary approach in the management of fibromyalgia. Comprehensive care models that integrate different medical disciplines, such as rheumatology, neurology, psychology, physiotherapy and occupational therapy, are being studied with the aim of providing more complete and personalized care.

Overall, fibromyalgia research continues to evolve and is expected to provide greater understanding of the underlying mechanisms of the disease and open up new opportunities for treatment and improvement of patients' quality of life. However, more research and collaboration is needed to address the challenges associated with this complex condition.

Figure 4 shows a summary of the classification and diagnosis, pharmacotherapy and therapeutic alternatives.

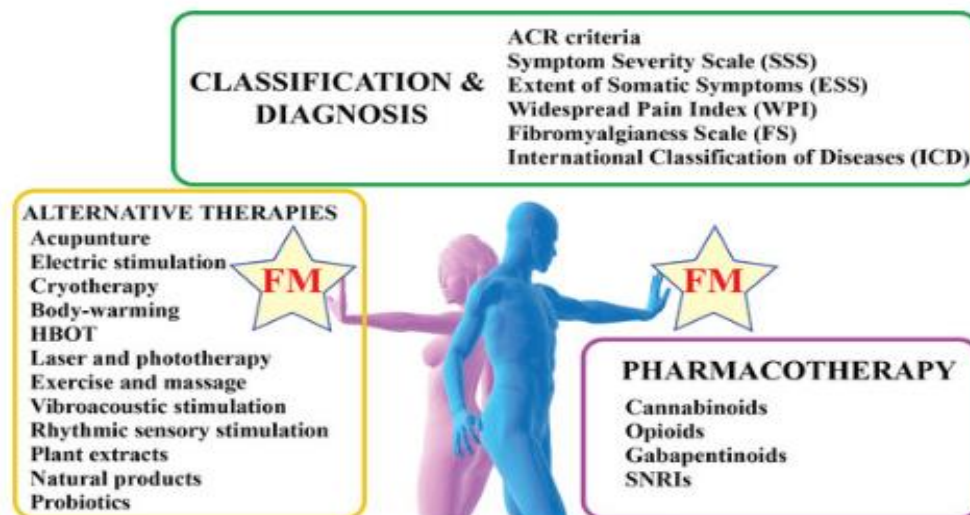


Figure 4: Classification, diagnosis, pharmacotherapy and therapeutic alternatives.

CONCLUSIONS

FM is a complex chronic disease that affects millions of people around the world. Its symptoms, diagnosis and treatment pose challenges for both patients and healthcare professionals. Although the exact cause of

fibromyalgia is not known, it is believed that genetic, neurochemical, immunological, and environmental factors may play a role in its development.

The diagnosis of fibromyalgia is based on the evaluation of symptoms and the exclusion of other medical conditions. Although there are no definitive diagnostic tests, the diagnostic criteria of the American College of Rheumatology provide a useful guide to identify the disease.

Fibromyalgia treatment focuses on relieving symptoms and improving quality of life. It includes the use of medications to control pain, improve sleep, and reduce inflammation. Physical therapy, cognitive behavioral therapy, and complementary therapies also play an important role in managing the disease. However, the treatment approach can vary from person to person, and it is important to have a personalized plan and work collaboratively with the medical team.

Fibromyalgia can have a significant impact on the quality of life of patients, affecting aspects such as daily activities, personal relationships, mental health and general well-being. Providing emotional support, education, and resources to patients is essential to help them cope with the challenges associated with the disease.

Future research in fibromyalgia is focused on better understanding underlying causes, identifying biomarkers, developing more effective treatments, and exploring innovative therapies. A multidisciplinary approach and greater collaboration between health professionals are key to advancing the understanding and management of fibromyalgia.

As research advances and understanding of fibromyalgia improves, it is expected that significant advances will be made in early diagnosis, symptom management, and quality of life for patients.

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