

# Fibromyalgia: “What we should know about”

Fibromyalgia is a common and chronic disorder of unknown aetiology characterised by widespread pain and tenderness, abnormal pain processing, sleep disturbance, fatigue, and, often, psychological distress, as well as other symptoms. Although fibromyalgia is frequently grouped with arthritis-related conditions, there is no apparent inflammation or damage to the joints, muscles, or other tissues.

Data regarding the exact prevalence of fibromyalgia in the United States are limited. The estimated prevalence is 2%, affecting roughly 5 million adults (age ≥18 years), with women having a higher prevalence (3.4%) and incidence (80-90%) of this condition than men (0.5% and 10-20%, respectively). Although fibromyalgia most typically presents to physicians in women of middle age, the onset of various pain symptoms often occurs early in life, and the condition can present in either sex at any age. Multiple epidemiologic studies have demonstrated a strong genetic association with fibromyalgia. Implicated genes

include genes involved in the serotonin and catecholamine pathways. Alterations in either of these pathways could alter pain sensitivity. Additional genetic markers have been identified through genome-wide scans.

A biopsychosocial model of fibromyalgia provides a useful framework for organisation. A number of biologic variables have been identified, including genetics, female sex, age, poor sleep, trauma, deconditioning, autonomic dysregulation, chronic infection, abnormal nociceptive processing, and stress. Identifiable psychological variables include hypervigilance, feelings of helplessness, poor coping strategies, depression, anxiety, certain personality traits and styles (eg, neuroticism, perfectionism, or compulsive behaviour), and excessive pain behaviours. Environmental and sociocultural variables associated with fibromyalgia include family support, job satisfaction, childhood abuse, and family members or friends with chronic pain.

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The pathophysiologic sequence of events that leads to the development of fibromyalgia is not well elucidated; however, a number of discrete cellular and biochemical abnormalities have been identified. The volume of abnormalities discovered in patients with fibromyalgia is high enough to substantiate the claim that it is not a subjective pain condition. When viewed collectively, these abnormalities suggest that fibromyalgia is a disorder of central sensitization or abnormal central processing of nociceptive pain input.

The pain associated with fibromyalgia is typically described as radiating diffusely from the axial skeleton over large areas of the body, predominantly involving the muscles and joints. Patients also present with various additional complaints. Fatigue and poor sleep are nearly universal. Cognitive problems ("fibro fog") produce impairments in memory and thinking. Patients with fibromyalgia typically suffer for many years before diagnosis and sometimes receive unnecessary, expensive, or needlessly invasive procedures or medication before fibromyalgia is recognized.

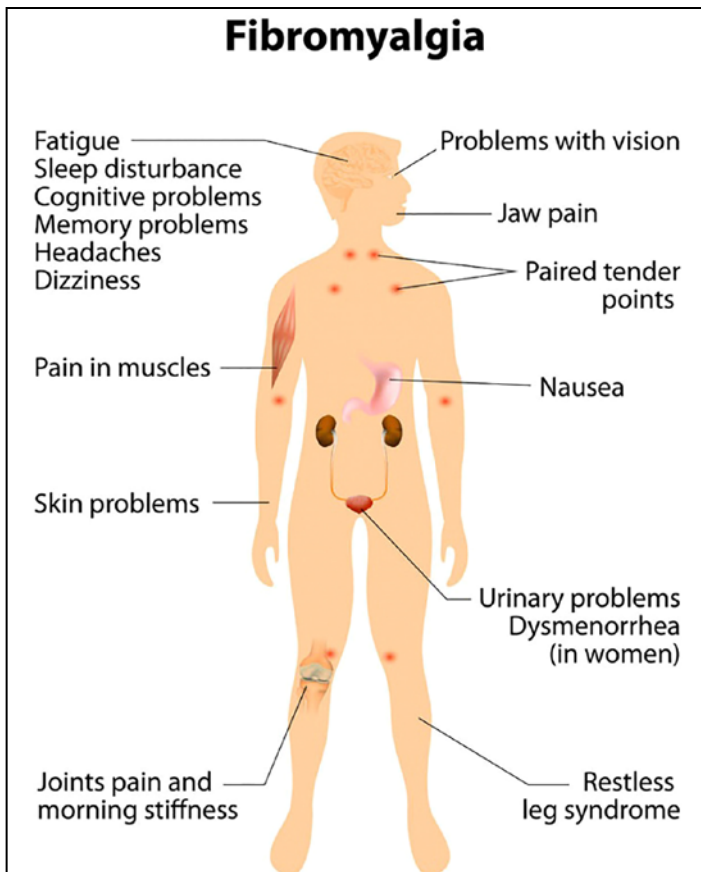
A history of more than 3 months of diffuse musculoskeletal pain, along with the other symptoms like tiredness, fatigue, headaches, memory fog, restless legs syndrome, irritable bowel syndrome, poor sleep, pins and needles etc suggests fibromyalgia. Physical examination is helpful in confirming the diagnosis. Except for heightened tenderness and evidence of deconditioning, the examination

usually yields normal findings. A tender-point examination should be performed at the start of the physical examination.

Fibromyalgia is a diagnosis of exclusion and patients must be thoroughly evaluated for the presence of other disorders that could be the cause of symptoms before a diagnosis of fibromyalgia is made. Patients must also undergo a thorough clinical and laboratory evaluation to identify alternative or coexisting diagnoses for chronic pain.

Although patients with fibromyalgia do not have characteristic or consistent abnormalities on laboratory testing, routine laboratory and imaging studies can help to rule out diseases with similar manifestations and to assist in diagnosis of certain inflammatory diseases that frequently coexist with fibromyalgia. Such tests include the following:

- Complete blood count with differential
- Metabolic panel
- Urinalysis
- Thyroid-stimulating hormone level
- 25-hydroxy vitamin D level
- Vitamin B12 level
- Iron studies, including iron level, total iron binding capacity, percent saturation, and serum ferritin level
- Magnesium level
- Erythrocyte sedimentation rate



Antipolymer antibody assay:  
May provide conclusive evidence for a subgroup of people with fibromyalgia; about 50% of fibromyalgia patients have antipolymer antibodies

**Management**

There is no cure for fibromyalgia, but education, lifestyle changes, and proper medications can help the individual to regain control and achieve significant improvement.

Models of pain behaviour that interrelate biologic, cognitive, emotional, and behavioural variables form the basis for cognitive-behavioural and operant-behavioural approaches to adult pain management. Fibromyalgia in children responds to a combination of psychotherapy, exercise, relaxation techniques, and education. Pharmacotherapy is generally not indicated in children.

**Patient Education**

Education is an essential element in fibromyalgia management. It begins with an empathetic manner on the part of the physician, who must affirm the patient's pain, explore social and behavioural variables (both in childhood and current) that influence the illness, and explain to the patient how stress and distress can amplify the severity of symptoms. Scheduling time to provide this education at early visits can save time in subsequent visits.

**Nonpharmacotherapy**

The patient should be encouraged to foster self-efficacy, and healthcare providers should work to diminish dependence over time. Providers can help by teaching patients about the following:

- Diet (eg, promote good nutrition, vitamin supplementation, bone health, weight loss)
- Stress management
- Aerobic exercise (eg, low-impact aerobics, walking, water aerobics, stationary bicycle)
- Sleep therapy (eg, education/instruction on sleep hygiene)
- Psychologic/behavioural therapy (eg, cognitive-behavioural, operant-behavioural)

**Physical Therapy/Physical Modalities**

Exercise programs should start gently and progress gradually to endurance and strength training.

**Table 1. The Evolution of ACR Classification of Fibromyalgia**

**The ACR 1990 Criteria**

Widespread pain in combination with:

- Tenderness at  $\geq 11$  out of 18 specific tender points
- Digital palpation should be done with about 4kg of force
- The patient must state that the palpation was painful for the tender point to be considered positive
- Concomitant radiographic or laboratory abnormalities do not lead to exclusions

In terms of diagnosis or classification, there is no distinction between primary fibromyalgia and secondary (or concomitant) fibromyalgia

**The ACR 2020 Criteria:**

Tender-point examination eliminated and patient questionnaire with 2 scales: widespread pain index (WPI) and the symptom severity score (SSS) were added.

Numerical score was created – the diagnosis of fibromyalgia syndrome was supported when:

- WPI  $>_7$  and SSS  $>_5$  or
- WPI 3-6 and SSS  $>_9$

**The ACR 2011 Criteria Modification**

Physician-estimate of somatic symptoms eliminated and the WPI and expanded. The new 0-31 FM symptom scale (FS) include:

- 19 pain locations
- 6 self-reported symptoms, including difficulty sleeping, fatigue, poor cognition, headache, depression and abdominal pain
- An FS  $>_13$  best separated criteria + and criteria – patients

**ACR American College of Rheumatology**

Patients should avoid prolonged, overly strenuous physical exercise before reconditioning is established.

**Aerobic and flexibility regimens**

Daily aerobic and flexibility exercises may be an essential component of the fibromyalgia rehabilitation program. The goal of these exercises is for the patient to exercise safely without increased pain.

An exercise regimen should include the following considerations:

- Always start at low levels of exercise and progress slowly: Begin with gentle warm-up, flexibility exercises; progress to stretching all of the major muscle groups

- Low-impact aerobic exercise at least 3 times weekly
- Target exercise regimen: 4-5 times a week for at least 20-30 minutes each time; may take months to achieve

For patients who may never achieve the level of the target exercise regimen, encourage them to exercise at the highest level possible without worsening their symptoms.

**Pharmacotherapy**

Always combine pharmacologic and nonpharmacologic therapy in the treatment of fibromyalgia. Aggressively treat comorbid depression.

Medications used in the management of fibromyalgia

include the following:

- Analgesics (eg, simple pain killers like Acetaminophen or tramadol)
- Antianxiety/hypnotic agents (eg, alprazolam, clonazepam, zolpidem, zaleplon, trazodone, buspirone, temazepam, sodium oxybate)
- Skeletal muscle relaxants (eg, cyclobenzaprine)
- Antidepressants (eg, amitriptyline, duloxetine, milnacipran, venlafaxine, desvenlafaxine)
- Anticonvulsants (eg, pregabalin, gabapentin, tiagabine)
- Alpha 2 agonists (eg, clonidine)
- Low dose Naltrexone

## Sleep

Poor sleep worsens and perpetuates symptoms, so intensive treatment is indicated. Most patients understand little about the nature of sleep; therefore, instruct them on the basics of sleep and proper sleep hygiene. Providing this education is one of the most helpful interventions.

Medications that may prove helpful for sleep problems that do not respond to nonpharmacotherapy include the following:

- Antidepressants (eg, trazodone, SSRIs, SNRIs, tricyclic antidepressants)
- Anticonvulsants (eg, clonazepam, gabapentin, tiagabine)
- Nonbenzodiazepine hypnotics (eg, zolpidem, zaleplon, eszopiclone)
- Muscle relaxants (eg, cyclobenzaprine, tizanidine)
- Dopamine agonists (eg, pramipexole)

Other agents used in fibromyalgia may include the following:

- Vitamins and minerals
- Malic acid and magnesium combination
- Antioxidants
- Amino acids
- Herbs and supplements

## Managing Flare-ups in Fibromyalgia

Patients should learn to identify the factors that trigger flare-ups (although, on occasion, no trigger can be identified) and what measures to take to decrease their symptoms. Tips for avoiding and managing flare-ups include the following:

- Treat infections quickly
- Avoid changes in diet
- Exercise as prescribed (ask patients not to increase their routine without consulting a physician)
- Moderate changes in activity
- Avoid unnecessary life changes
- Treat changes in mood or sleep early and aggressively
- Always start new medications at the lowest possible dose
- Prepare for unavoidable situations that have caused flare-ups in the past (eg, arrange for an increase in sleep medication or for help with housework and child care)
- Encourage patients to pace their activities and know their limits

## Any latest treatments in Fibromyalgia?

Scrambler therapy "**Calmare Therapy**" in Fibromyalgia is widely used in the USA and it is also available in Ireland as a non drug treatment for pain relief.

**Calmare Pain Therapy** is a U.S. FDA 510(k)-cleared and European CE mark-certified pain therapy medical device to treat pain without the use of drugs, a non-invasive, biophysical approach to chronic pain relief by transmitting a 'no-pain' message to the pain-producing nerve/s via painless surface electrodes applied to the skin consistently over a period of time and has been found to be very effective pain relief therapy in Fibromyalgia without the use of drugs or medications and in many other pain conditions including neuropathic pain.

Professor Fahim Khan (MBBS,MD,MRCP London,, MRCP Rheumatology RCP-UK, FRCP London, FRCP Edin, FACP, Diplomate American Board of Rheumatology ,is a consultant Rheumatologist at the Aut Even Hospital Freshford Road Kilkenny and Beacon Hospital Dublin. Prof Khan also works as a visiting Rheumatologist at the Orlando Health, Fibromyalgia Center in USA.

Prof.Khan completed his higher postgraduate qualifications from Ireland, UK and USA. and qualified the membership examination of the Royal College of Physicians of London UK, Fellowship from the Royal college of Physicians of London and Edinburgh UK ,Fellowship in Rheumatology and research experience in knee Osteoarthritis from the Indiana

university Indianapolis IN USA , Board certified in Rheumatology and is a fellow of the American College of Physicians.

Prof.Khan has extensive experience in Rheumatology including Fibromyalgia and Soft tissue Rheumatism, Osteoarthritis, Rheumatoid arthritis, Psoriatic arthritis, Spondyloarthritis, early arthritis clinics and rheumatology related pain management disorders including back pain and has extensive experience in musculoskeletal ultrasound in rheumatology and ultrasound guided joint injections and for back pain.

Prof. Khan has extensive experience in the use of Scrambler therapy,"Calmare Therapy" for pain management which is a U.S. FDA 510(k)-cleared and European CE mark-certified pain therapy medical device for pain management without the use of drugs, in Rheumatological conditions like Fibromyalgia, Myofascial pain syndrome, neuropathic pain back pain and is the sole provider of Calmare therapy in Ireland for over 10 years with excellent results.

Prof. Khan is the author of many medical and rheumatology articles/publications in the leading international medical/ rheumatology journals.

## MSK FOCUS: NEWS

# Impact of Arthritis on Mental Health

Arthritis Ireland is highlighting the impact that arthritis can have on people's mental health and wellbeing during National Arthritis Week, which took place 12-18 April.

According to the national patient organisation, arthritis is associated with poor mental health, including depression and anxiety. Research has shown that up to 20% of rheumatoid arthritis patients experience depression, with 30% developing depression within five years of diagnosis.

Arthritis is the biggest cause of disability in the country and affects one million people in Ireland.

According to Gráinne O'Leary, Chief Executive of Arthritis Ireland, "While the physical symptoms of arthritis, like fatigue and joint damage, are well recognised, there is much less awareness of the drastic effect the condition can have on mental health and well-being.

"The disruptive and destructive nature of arthritis impacts people's relationships, their careers and their capacity to enjoy life. The burden of living with chronic pain and fatigue affects mental, as well as physical health, with the most common psychological comorbidities being depression and anxiety.

"However, these are poorly recognised within the health system, and there is too little psychological support for people to help them deal with the mental health aspects of living with a chronic disease like arthritis," O'Leary said.

As part of National Arthritis Week, the charity held an online information event on Tuesday 13 April with Dr Jennifer Wilson-O'Raghallaigh, Chief Clinical Psychologist at Beaumont Hospital to discuss the relationship between arthritis and mental

health. They also aired a series of online daily mindfulness sessions with mindfulness practitioner, Susan Barrett.

How sleep, diet and exercise affect inflammation was the theme of an online symposium to be held in conjunction with the molecular rheumatology unit at Trinity College Dublin, which took place on Thursday 15 April.

The charity also launched a nationwide survey looking to gain a better understanding of how arthritis affects mental health, and it announced a new six-week mental health online course, called Behind the Pain.

Further information about National Arthritis Week is available on the charity's website at [www.arthritisireland.ie](http://www.arthritisireland.ie).



Gráinne O'Leary, Chief Executive, Arthritis Ireland