

# Fibromyalgia Syndrome: Benefits of Exercise Therapy

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## Introduction

Fibromyalgia syndrome (FMS) has been described as a chronic pain syndrome with widespread pain, diffuse tenderness and joint stiffness typically lasting a period longer than 3 months (Cheatham 2013 and Busch et al 2011). Other characteristic symptoms include disturbed sleep, fatigue, headaches, concentration and memory problems (Bennett 2005). The aetiology of this condition is still unknown, however researchers have hypothesised that there may be a genetic disposition as well as neurochemical imbalances within the central nervous system (CNS) (Corrales 2011). This increased activity can heighten sensitivity to stimuli (allodynia) and also heighten response to a painful stimuli (hyperalgesia) (Brumitt 2013).

Typically more common in females with a documented ratio of 3:1, diagnosis of this complex condition is usually done via palpation of trigger points, with the literature identifying 18 locations (9 on each half) that may produce pain when palpated, it has been suggested that a score of 11 or more is required to gain an accurate diagnosis (Cheatham 2013, Busch et al 2011 and Brumitt 2013). While FMS is becoming a more common condition, there still appears to be disparity regarding the most appropriate management strategies (Corrales 2011 and Brumitt 2013). Common treatment options include pharmacology, patient education, massage, mobilisations and exercise therapy (Cheatham 2013 and Busch et al 2011).

## Treatment options

The aim of treatment in a patient with FMS is to reduce pain, improve flexibility, strength, endurance and quality of life (Brumitt 2013). Individuals with FMS are typically inactive with poor levels of fitness, therefore initiation of an exercise program should be progressive to ensure no exacerbation of symptoms. Prior to commencement of an exercise program it is vitally important that the individuals past and present medical and exercise history are discussed (Brumitt 2013). Failure to individualise the program could worsen the patients symptoms, thus reducing the likelihood of compliance (Corrales 2011). Recently there has been a growing support for the inclusion of exercise into the management of FMS (Cheatham 2013 and Busch et al 2011).

### *Aerobic Exercise*

Good support exists for the inclusion of aerobic exercise in the management of FMS, main improvements experienced in overall function and pain perception with minimal change on tender points. Levels of fatigue and depression were also significantly better. Nordic walking has recently been evaluated as an effective method of improving function, due to the upper limb involvement.

### *Strength Exercise*

Strong evidence exists for the use of strength training in FMS, with improvements in strength, neuromuscular function, pain, functional capacity and sleep disturbance. Progression should be gradual as to prevent regression, with studies reporting intensities beginning as low as 40-50% of one repetition maximum (1RM) with gradual progression as tolerated. Work with the individual to establish a starting point and progress as

appropriate. Research into the benefits of strength training is promising, further studies are required to establish appropriate training guidelines.

### *Aquatic Exercise*

Aquatic exercise has been found to have favourable effects on individuals with FMS, especially in individuals with advanced symptoms. Working out in warm water has been shown to have some therapeutic benefits. In individuals with managed symptoms research suggests land based aerobic activity may yield greater improvements in symptoms

### *Combined Methods*

While there is numerous support for strength and aerobic exercise, increased benefits have been found when the modalities are combined. Careful consideration is required in the structuring of the program to avoid over training.

### *Lifestyle Physical Activity*

Individuals with advanced symptoms may find it difficult to begin an exercise regime due to exacerbation of their symptoms, it may be beneficial for these individuals to begin integrating activity into their daily lives, i.e. taking the stairs, walking more often and even accumulating shorter bouts of exercise throughout the day.

### *Pharmacology*

Medications being taken may impact individuals perception of pain and may impair function, depending on the drug taken. Clients levels of pain and fatigue should be monitored closely throughout the session.

### *Tai Chi, Yoga and Pilates*

Positive results regarding tai chi, yoga and pilates in the management of FMS, individuals described feelings of increased relaxation and reduced pain. Higher compliance was found with instructor led sessions, with effects decreasing when sessions were unavailable. Hatha yoga has been found to be the most effective in management of FMS.

## **Current Guidelines in Exercise Prescription**

When determining the most appropriate management for the FMS client, it is important to note that while there is an increasing body of research regarding the management of FMS there appears to be a distinct lack of agreement in the correct guidelines for exercise prescription. Exercise prescription needs to be based on patient characteristics, newly diagnosed may have increased psychological distress, it has also been demonstrated that individuals with increased symptoms experience lower levels of aerobic fitness.

### *Type*

Research has found that multiple modalities can be far superior to individual exercise types. Its important to establish what the patients exercise preferences are to ensure adherence.

### *Intensity*

exercise levels should progress from low intensity with the goal to increase as tolerated. Resistance level should be lower than age matched norms, with increases of 10% every 2 weeks if no exacerbation of symptoms is found. If any post exercise soreness or fatigue outwit the norm is experienced, intensity and duration should be reduced as tolerated.

## Delivery

In the initial stages of exercise prescription supervision is encouraged, this ensures proper form and technique is experienced. Following this exercise diaries and pedometers have been found to encourage self monitoring of symptoms and can aid in adherence.

Intervention	Suggested Guidelines
Aerobic Training	Frequency: 2-3 times per week
	Intensity: light to moderate
	Time: 20-30min
	Duration: at least 4 weeks
Strength Training	Frequency: 2-3 times per week
	Intensity: 40-80% of 1RM
	Reps: 1-3 sets of 5-20 reps
	Duration: 12-20 weeks
Aquatic Exercise	Frequency: 3 times per week
	Intensity: 50-80% of age predicted max HR
	Time: 30-60mins
	Duration: 16 weeks
Pilates, Tai Chi or Yoga	Frequency: 2-3 times per week
	Intensity: Determined by clients functional level
	Time: 60-90mins
	Duration: 8-12 weeks

Table 1: Exercise guidelines for individuals with fibromyalgia

## Conclusion

The results of the increasing body of research demonstrate there is a significant benefit to exercise in patients with FMS. As with any exercise prescription individualisation is important, especially so within this population. A fine line exists between performing enough exercise to achieve a physiological benefit, and too much that it could increase the clients symptoms making exercise near impossible. Further research is required regarding the best prescription for exercise, table 1 gives a broad guidelines for beginning with exercise, always remember to take the clients symptoms into consideration when performing any form of exercise and be prepared to adjust accordingly.

## References

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