FIBROMYALGIA & EXERCISE

PROFESSIONAL

WHAT IS FIBROMYALGIA

Fibromyalgia is a common, and for some, a debilitating condition due to the musculoskeletal pain it causes. It is usually accompanied by other problems, such as fatigue, sleep disturbance and cognitive difficulties (1). Fibromyalgia commonly coexists with other chronic illnesses and can result in poorer outcomes if untreated. Fibromyalgia is underpinned by changes in the central nervous system (CNS) that alters processing of afferent sensory input, also known as 'central sensitisation', which is often triggered by long term stress (1). The stress over time results in the intensity of usually non-painful stimuli being amplified and experienced as painful. Other impacts alter the sleep cycle and disturbances in the hypothalamic-pituitary axis. Any physical or psychological stressor in an at-risk individual can result in a chronic, maladaptive stress response, which alters the central changes (1).

BENEFITS OF EXERCISE

The effects of exercise on various outcomes shown in the table have been determined from meta-analyses.

	TYPE OF EXERCISE			
OUTCOME	**MODERATE INTENSITY AEROBIC** *Walking, games, aerobic dance, treadmill, cycling*	**RESISTANCE TRAINING** *Progressive resistance training*	**COMBINED AEROBIC AND RESISTANCE** *Combination of two or more strength, aerobic, flexibility*	**AQUATICS**
Pain	Small to no effect	Large effect but limited data	Large effect	Medium effect
Fatigue	Small effect	Nil	Nil	Nil
Global health	Small effect	Large effect but limited data	No effect	Medium effect
Physical function	Medium effect	Large effect	Large CV effect, medium strength effect	Large effect
Depression	Medium effect	Large effect but limited data	Medium effect	Large effect but limited data

Adapted from: Busch et al. (2); Busch et al. (3); Sosa-Reina et al. (4)

It has been reported that in studies that look at the benefits of exercise, there can be adverse effects. These include; an increase in the symptoms of pain, stiffness, and fatigue, in addition to musculoskeletal problems such as, plantar fasciitis/impingement syndrome. While these events have not been consistently reported, they do contribute to a level of drop-out rates in the trials. This makes certain studies difficult to rely on due to their size. Overall, it is important to consider the individual, their goals and limitations to make conclusions about what exercises will be effective for them.

In other literature, tai chi, yoga, and Pilates have been considered as possible activities for those with fibromyalgia. These modalities are largely effective and safe (5-7), suggesting there could be a mind–body approach for people with Fibromyalgia. Meta analyses in this area suggests it is vital to look at the study designs to determine whether the results are reproducible for the target population (8).

EXERCISE TYPES FOR FIBROMYALGIA

Exercise is best delivered in conjunction with other treatments to manage symptoms, including; medications, self-management, education programs, stress-management strategies and relaxation training.

The current evidence, based on the literature suggests:

TYPE	FREQUENCY	INTENSITY	TIME
Aerobic exercise	2-3 times per week	50-80% HRR, moderate intensity	30-60 mins
Resistance exercise	2 times per week	1-3 sets, 8–10 exercises, 8–10 repetitions from 45% 1RM	40-60 mins
Combined + stretching	2-3 times per week	As above	45-60 mins
Tai Chi	2 times per week	Gentle	45 mins
Yoga	2 times per week	Gentle	45 mins

Adapted from Sosa-Reina et al. (4).

Exercise is proven to be beneficial for people with Fibromyalgia but it is difficult to draw concrete conclusions about what type of exercise is most effective because not enough studies were included in the meta-analyses conducted (4). The research undertaken utilises a training regime over a period of time and results are only reported on during this time period. It is unknown what long-lasting benefits arise due to minimal data following the long-term effects (9). Thus, it is difficult to establish long-term efficacy, so practitioners should consider a holistic approach to the management of Fibromyalgia. Accredited Exercise Physiologists and Physiotherapists are qualified and experienced in exercise prescription for those living with chronic conditions. It is recommended to consult one of these Exercise Professionals for an individual assessment and exercise program. Referrals to exercise professionals can assist to determine the most appropriate interventions to be utilised.

RELATED INFORMATION AND REFERENCES

Exercise is Medicine Australia www.exerciseismedicine.org.au
Exercise Right www.exerciseright.com.au
Find a Physiotherapist www.choose.physio
Find an Accredited Exercise Physiologist www.essa.org.au
Endometriosis Australia https://www.endometriosisaustralia.org/

If you have any concerns about the safety of your patient in commencing an exercise program, please consider referral to a Sport and Exercise Physician.
Find a Sport and Exercise Physician www.acsep.org.au/

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1. Guymer E, Littlejohn G. Fibromyalgia. Australian family physician, 2013; 42(10), 690-694. Available from: https://www.racgp.org.au/afp/2013/october/fibromylagia/
2. Busch AJ, Barber KA, Overend TJ, Peloso PMJ, Schachter CL. Exercise for treating fibromyalgia syndrome. Cochrane database of systematic reviews, 2007; 4. Available from: https://doi.org/10.1002/14651858.CD003786.pub2
3. Busch AJ, Webber SC, Brachaniec M, et al. Exercise therapy for fibromyalgia. Current pain and headache reports, 2011; 15(5), 358. Available from: https://pubmed.ncbi.nlm.nih.gov/21725900/. Doi: 10.1007/s11916-011-0214-2
4. Sosa-Reina MD, Nunez-Nagy S, Gallego-Izquierdo T, et al. Effectiveness of therapeutic exercise in fibromyalgia syndrome: a systematic review and meta-analysis of randomized clinical trials. BioMed research international, 2017. Available from: https://www.hindawi.com/journals/bmri/2017/2356346/. Doi:https://doi.org/10.1155/2017/2356346
5. Wang C, Schmid, CH, Rones R, et al. A randomized trial of tai chi for fibromyalgia. New England Journal of Medicine. 2010; 363(8), 743-754. Doi: 10.1056/NEJMoa0912611. Available from: https://pubmed.ncbi.nlm.nih.gov/20818876/
6. Carson JW, Carson KM, Jones KD, et al. A pilot randomized controlled trial of the Yoga of Awareness program in the management of fibromyalgia. PAIN®, 2010; 151(2), 530-539.. Available from: https://pubmed.ncbi.nlm.nih.gov/20946990/. doi:10.1016/j.pain.2010.08.020
7. Ide MR, Laurindo IMM, Rodrigues-Júnior AL, Tanaka C. Effect of aquatic respiratory exercise-based program in patients with fibromyalgia. International Journal of Rheumatic Diseases, 2008; 11(2), 131-140. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1756-185X.2008.00348.x. Doi:https://doi.org/10.1111/j.1756-185X.2008.00348.x.
8. Mist SD, Firestone KA, Jones KD. Complementary and alternative exercise for fibromyalgia: a meta-analysis. Journal of pain research. 2013; 6, 247. Available from: https://www.dovepress.com/complementary-and-alternative-exercise-for-fibromyalgia-a-meta-analysi-peer-reviewed-article-JPR. Doi: https://doi.org/10.2147/JPR.S32297
9. Giannotti E, Koutsikos K, Pigatto M, et al. Medium-/long-term effects of a specific exercise protocol combined with patient education on spine mobility, chronic fatigue, pain, aerobic fitness and level of disability in fibromyalgia. BioMed research international, 2014, 474029. Available from: https://www.hindawi.com/journals/bmri/2014/474029/. Doi:https://doi.org/10.1155/2014/474029