

Clinical Exercise Prescription

for Atrial Fibrillation



Persons living with Atrial Fibrillation should engage in moderate intensity whole body aerobic activities progressing to 60 min per session 3-5 days per week for an improvement in quality of life and overall health status. Exercise sessions should also incorporate stretching, balance, and resistance exercises.

For persons living with Atrial Fibrillation, in addition to increasing incidental physical activity (e.g., taking the stairs, reducing sitting time, chores, leisure walking, etc.) regular structured exercise is important for treating and managing their condition. Regular exercise can also lead to reduced incidences of Atrial Fibrillation. The above prescription is based on a strong body of evidence that supports the effectiveness of 60 min of near daily exercise for improving quality of life, exercise tolerance, and the ability to carry out activities of daily living in persons living with Atrial Fibrillation. This is a recommended level; individuals new to exercise should progress towards this goal.

The needs and risks of each person living with Atrial Fibrillation are different. Therefore, it is recommended that each person participate in an individually tailored exercise program that builds upon the recommendation provided above (see following sections for further information).

Moderate Intensity Exercises

- Brisk walking
- Exercising on a stationary cycle
- Swimming and water aerobics
- Golfing
- Walking the dog
- Lifting weights (with upper & lower body resistance exercises)

Health Benefits of Exercise

- Improved heart health
- Enhanced bone health
- Enhanced mood
- Improved quality of life
- Enhanced exercise tolerance
- Reversion to normal heart rate

Both Incidental Physical Activity and Structured Exercise are good for your mind and body!

Background

★ Atrial Fibrillation, one of the most common cardiac arrhythmias, can lead to significant cardiovascular disorders.

The primary symptoms of Atrial Fibrillation include:

- Rapid, irregular heartbeat
- Chest pain
- Low exercise tolerance

Key secondary issues of Atrial Fibrillation include:

- Fatigue
- Physical inactivity
- Low health-related physical fitness
- Increased risk of stroke

Lower exercise tolerance is common in those living with Atrial Fibrillation increasing the risk for various secondary ailments associated with physical inactivity such as cardiovascular disease, diabetes, osteoporosis, weakness, fatigue, and pain.

Structured regular exercise is an important way to address the increased risk for chronic disease and stroke that can occur with Atrial Fibrillation. Health care professionals and persons living with Atrial Fibrillation alike must have a clear understanding of the unique limitations and responses to exercise associated with Atrial Fibrillation. Various factors (such as exercise tolerance and chest pain) influence the mode/type and intensity of exercise in which a person living with Atrial Fibrillation may be able to participate. Therefore, the application of generic physical activity guidelines to the treatment of Atrial Fibrillation is not recommended.

Pages four and five of this document provide detailed information regarding effective exercise prescription for persons living with Atrial Fibrillation, expanding upon the summary recommendation contained on the first page and providing an example exercise prescription that can be modified according to symptoms.

This exercise prescription is based on the evidence-based best practice recommendations from a recent systematic evaluation of the literature (Giacomantonio et al. 2012). These recommendations have gone through an international consensus panel evaluation involving leading experts from various chronic disease conditions, exercise specialists, key knowledge users, and international organizations.

Everyone can reap the health benefits of regular exercise!

Overview and Example Exercises

Persons living with Atrial Fibrillation may participate in a wide range of exercises that address their unique health status. Exercise interventions should involve exercises related to aerobic conditioning, balance and coordination, muscular strength and endurance, functional activities, and flexibility. Below are some example exercises that may be used to meet the evidence-based best practice recommendations. Detailed exercise prescriptions follow on pages four and five.

Aerobic Exercises

Exercise training incorporating moderate intensity aerobic exercise (using large muscle groups) leads to various functional and health-related improvements in persons living with Atrial Fibrillation. The prescription of exercise based on predicted maximal heart rates is quite difficult owing to the variability in heart rate seen amongst persons living with Atrial Fibrillation. Therefore, exercise prescriptions are often based on perceptions of effort (see Table 1), and/or maximal symptom limited exercise test findings. The great news is that persons living with Atrial Fibrillation can engage safely in a wide range of light-to-moderate intensity activities. Some examples of light intensity exercises include light gardening and household activities. Good examples of moderate intensity exercise include water aerobics, swimming, walking, exercising on a stationary cycle, and golfing.

Balance and Coordination Exercises

A strong body of evidence supports the incorporation of balance and coordination exercises into an effective exercise prescription. Walking is a commonly performed activity that provides an important stimulus for balance, coordination, and cardiovascular health. Other effective balance and coordination exercises include Tai Chi, tandem walking (e.g., touching the heel of the lead foot to the toe of the trailing foot), standing with feet closer together than usual, forwards and sideways stepping, reaching while standing, and sit-to-stand exercises.

Muscular Strength and Endurance Exercises

Persons living with Atrial Fibrillation often also possess low musculoskeletal fitness. There is growing evidence that the inclusion of muscular strengthening exercises (particularly of the lower limbs) can improve overall health status, and the ability to carry out activities of daily living. A variety of muscular strengthening exercises can be performed, and formal resistance training equipment is not required. Moderate intensity muscular strength and endurance exercise equates to approximately 10-15 repetitions per exercise for 1-3 sets and 2-3 days/week (see Table 2).

Functional Exercises

The ability to carry out activities of daily living is of great importance for persons living with Atrial Fibrillation. In particular, persons with significant limitations appear to benefit from the incorporation of functional exercises. Many of the exercises provided above will have a beneficial impact on functional capacity. Other functional exercises include standing up from sitting on a chair and lifting light household weights (such as soup cans or milk containers with water).

Flexibility Exercises

Enhanced flexibility is related to an improved capacity for mobility and performing activities of daily living. Exercises such as stretching and Tai Chi are examples of effective exercises.

Exercise Tips and Safety Considerations

- Begin an exercise program slowly; it is advisable to consult your physician and/or a qualified exercise professional before starting an exercise program
- When new to exercise, it is advisable to exercise in the presence of others
- Take breaks when needed and work according to how you feel
- Perform all prescribed exercises in a safe and controlled manner

It is never too late to start!

Clinical Exercise Rx

Exercise prescriptions for persons living with Atrial Fibrillation should take into account the unique physiological limitations associated with mild, moderate, and severe symptoms. All exercise interventions should start slowly involving exercises performed in a safe and controlled manner.

Persons with mild-to-moderate symptom severity may participate in a wide range of exercises, while individuals with more severe symptom severity should participate in activities that are highly functional in nature (addressing the importance of carrying out activities of daily living).

Table 1 provides an example aerobic exercise prescription emphasizing the importance of engaging in whole body aerobic exercises (including balance and coordination). Table 2 provides an example prescription for exercises that challenges the musculoskeletal system.

Table 1: Aerobic exercise prescription for a person living with mild-to-moderate Atrial Fibrillation symptoms.

Program Stage	Week	Frequency (days/week)	Intensity		Breathing Rate	Duration (min)
			%HRR	RPE		
Familiarization • Light to moderate intensity aerobic exercises • Balance and coordination exercises	1-2	3	30-40	2-3	Slightly Increased	15-20
	3-4	3	30-40	2-3		20-25
Goal Specific • Balance and coordination exercises • Moderate intensity aerobic exercises • Functional exercises	5-6	3	40-50	3-5	You can hear your breathing	25-30
	7-8	3	40-50	3-5		25-30
	9-10	3-5	40-50	3-5	Noticeably Increased (Almost unable to carry on a conversation)	30-35
	11-12	3-5	40-50	3-5		30-35
	13-14	3-5	40-50	3-5		35-40
	15-16	3-5	40-50	3-5		35-40
	17-18	3-5	40-50	3-5		40-45
	19-20	3-5	45-55	4-6		40-45
	21-22	3-5	45-55	4-6		45-50
23-24	3-5	45-55	4-6	45-60		
Motor Function and Health-Related Fitness Maintenance	>24	3-5	50-60	4-6		45-60

%HRR, percentage of heart rate reserve; RPE, rating of perceived exertion (with 10 being the most effort).

For the patient and practitioner alike, it is important to recognize that exercise prescriptions based solely on heart rate are often difficult (particularly considering the fact that reliable heart rate measurements are often difficult). Therefore, a menu of options for exercise prescription have been provided including heart rate, RPE, breathing rate, and example activities.

Clinical Exercise Rx

Table 2: Musculoskeletal exercise prescription for a person living with mild-to-moderate Atrial Fibrillation symptoms.

Program Stage	Week	Frequency (days/week)	Intensity	Sets	Muscle Groups
Familiarization <ul style="list-style-type: none"> • Light intensity upper and lower body resistance exercises • Flexibility exercises 	1-4	1-2	Light-to-Moderate (15-20 repetitions)	1	8-10 Major Muscle Groups <ul style="list-style-type: none"> • At least one exercise per muscle group • Exercise large muscle groups first • Alternate between upper and lower body exercises to facilitate recovery • Approximately 2-3 min for recovery between exercises
Goal Specific <ul style="list-style-type: none"> • Moderate intensity upper and lower body resistance exercises • Flexibility exercises 	5-24	2-3	Moderate (10-15 repetitions*)	1-2	
Motor Function and Health-Related Fitness Maintenance	>24	2-3	Moderate (10-15 repetitions*)	2-3	

Repetition refers to the completion of a single exercise. Set refers to a number of repetitions performed consecutively until reaching fatigue. Fatigue refers to when the participant is unable to complete the exercise in a correct manner. For each set of exercise, the range of repetitions (e.g., 10-15) refers to the participant being able to complete this number of repetitions before reaching fatigue. The resistance will need to be adjusted accordingly if a participant is able to lift more than recommended repetitions. *More active individuals may wish to complete 8-12 repetitions (representing a higher absolute workload). Participants should complete each repetition in the full range of motion (without pain) with a moderate speed of movement (approximately 6 sec per repetition).

A musculoskeletal exercise prescription should be progressive and individualized throughout. A gradual increase (approximately 5%) in the resistance load should be achieved every 2-4 weeks. For instance, early into training, once the participant is able to easily complete 15 repetitions per exercise an additional set may be added with repetitions decreasing from 15-20 to 10-15 per set. Thereafter, the workload for each exercise can be increased once the participant is easily able to lift the weight for 15 repetitions.

Flexibility exercises (stretching) of the major muscle groups should include one to four repetitions per muscle group. Static flexibility exercises of major muscle groups should be held for 10-30 sec. Flexibility exercises should be preformed after musculoskeletal or aerobic exercise.

Source: This document was produced in accordance with the AGREE process by the International Consensus Committee on Clinical Exercise Prescription based on the evidence-based best practice recommendations of Dr. Nicholas Giacomantonio and colleagues (2012) and the exercise prescription recommendations of Warburton et al. 2012. The International Consensus Committee on Clinical Exercise Prescription, supporting agencies of this document, and their agents assume no liability for persons who undertake exercise and/or make use of this document. All persons living with Atrial Fibrillation who wish to begin an exercise program are recommended to contact their physician, another allied health professional, or a qualified exercise professional prior to exercise.