

I START Tool

A Health and Exercise Professional Guide To facilitate the prescription of muscle strengthening exercise for people with rheumatoid arthritis

Click on the underlined text to learn more about any topics you are unfamiliar with!

1 **Understand Rheumatoid Arthritis**

Rheumatoid arthritis (RA) is a chronic, inflammatory, autoimmune disease that can affect any joint, often the hands and feet. Clients may experience pain, fatigue, and changes to joint alignment, biomechanics, stability, and function. Co-morbidities, depression, and medication side effects are also common. Do your homework on symptoms, pathophysiology, and medications before starting.

2 **Understand RA-Specific Muscle Strengthening Exercise Strategies**

Review Pages 2 and 3 to familiarize yourself with RA-specific exercise prescription strategies.

3 **Get to Know Your Client, Gauge Interest, and Highlight Benefits**

Build rapport and ask your client if they're interested in muscle strengthening exercise. Talk about benefits such as reduced pain and risk of cardiometabolic disease or improved function and mental health. Ask your client to complete the "I START Client Guide" and to send to you before your next session (or complete the questions together).

4 **Reiterate the Safety of Exercise**

Reassure your client that muscle strengthening exercise is safe and that you'll start at what they're comfortable with and progress gradually. You can use the CSEP Get Active Questionnaire for exercise preparticipation-screening.

5 **Assess/Set Goals**

Together, review your **client's filled I START form**. Ask, "Has anything changed since you filled out your sheet? How are you feeling today in terms of things like joint symptoms, pain, and stiffness? We'll adjust the intensity accordingly." Conduct any other assessments you feel appropriate to help guide your decision-making. Document changes and your observations.

6 **Prescribe**

Use the **the form on Page 4 & 5** to create an exercise plan that aligns with their goals. **Start at the intensity and amount your client is ready for** - remember, anything is better than nothing!
Also work slowly towards getting >150 minutes of moderate-to-vigorous aerobic activity/week (e.g., going for a brisk walk/wheel), move more, decrease sedentary time, and sleep well as defined by the "24-Hour Movement Guidelines".

7 **Provide Resources/Support to Continue Exercising and Follow-Up**

Support your client to stick with their exercises (**Page 2**). Create a plan (day[s], time, and location) for their exercise. Set a strategy to monitor progress, maintain accountability, and receive feedback. This monitoring can be done with you or someone close to your client. Additional resources are also available for mental health, mindfulness, and pain.

8 **Refer to Other Professionals/Support When Necessary**

Use a team approach to supporting your client to participate in muscle strengthening exercise. Family and friends, kinesiologists, clinical exercise physiologists, physiotherapists, rheumatologists, or other health and exercise professionals who have experience working with people living with RA are just some examples of who should be involved!

Review in Advance:

Exercise Prescription Considerations for Rheumatoid Arthritis

1. Before prescribing:

- **Be able to define what muscle strengthening exercise is:** "Movement using bodyweight or external resistance that improves muscular strength, power, or endurance, and may ultimately positively impact mobility, function, and independence."¹
- **Conduct assessments** you feel appropriate to guide decision-making. Consider using the 30 Second Sit to Stand Test or Predicted 1-Repetition Maximum testing to assess muscular fitness.
 - Optional: The Multi-Dimensional Health Assessment Questionnaire may help evaluate current functional ability; if scores are higher, consider decreasing intensity today.

2. During each muscle strengthening session:

- **Include a warm-up** that increases blood flow to the working muscles and improves safe range of motion and mobility. The warm-up can be used to assess mobility, help the client gauge their disease symptoms that day, and to reduce pain and stiffness.
- **Monitor symptoms** throughout and after the session to inform whether intensity or any exercises need to be modified or changed the next session.
- **If feeling pain:** "Where are you currently feeling your pain? Is it in the joint or in the muscle?"
 - Pain location (i.e., in the muscle) may be used to help distinguish normal, strength training-related delayed onset muscle soreness pain from potentially harmful joint pain that persists to the next day.
- **If in a flare:** "What does this flare feel like for you? Are there specific joints that are inflamed? We will focus on strengthening exercises that involve the least symptomatic joints at a lower intensity but continue to do tolerable range of motion for the other joints."
 - Flares are increases in intensity of disease symptoms that are worse than typical. They are experienced differently by each individual. Offer variety/adaptability in equipment, exercises, range of motion, dose, progression, and scheduling. It may be helpful to have a plan for flare and non-flare days or to provide ranges in repetitions or intensity in your program.

3. Supporting the maintenance of the program:

Review your client's I START Client Guide responses to see how you can best support them to maintain their program.

- **Explore ways to keep their exercise engaging** like exercising with a friend, joining a group class, and use strategies like goal setting, action planning, and monitoring to help your client stick to their program.
- **Progress slowly and give praise** when appropriate to help overcome fear of being active.
- **Use adaptive or protective devices** such as padded gloves, splints, wrist hooks, or adapted shoes to help the client strength train more comfortably. Cuff weights can be used to avoid stress to finger and wrist joints.
- **Give your client a copy of their program** with clear instructions or refer them to the videos. Forgetting exercises is common for all of us, but is especially important for clients experiencing symptoms that cause memory loss or 'brain fog'.
- **Work with your client to explore how strategies can be inclusive** of cultural, gender, socioeconomic, and other important considerations to your client (e.g., clothing, gender-inclusive change rooms, diverse practices of movement like Tai chi, etc.).

Review in Advance: Modified ACSM Prescription Guidelines²

**Goal is to work towards 2-3 sets of 6-12 reps, using 1-2 multi-joint exercises per major muscle group.
Aim for an end-of RPE of at least 6-8/10, 2-3 times/week on non-consecutive days.**

Program Variable	Recommendation	Notes
Sets	1-3 sets per exercise/muscle group.	<ul style="list-style-type: none"> Start with one set for beginners or older adults with frailty.
Repetitions	Start with 10-15 at a lower relative resistance for beginners and progress to heavier weights at 6-12 reps. ³	<ul style="list-style-type: none"> Strength and muscle growth can be optimized using higher reps with lower weights or lower reps with higher weights if effort at the end of the set is high.
Intensity	<p>Start at the intensity level that they are ready for and progress to higher intensities (>6-8 out of 10).</p> <p>Lighter loads are recommended for beginners, or adults with frailty or special considerations (e.g., cardiovascular disease, osteoporosis).</p> <p>When training for power, use light to moderate intensities (3-6 out of 10) with high velocity movements.</p>	<p>Modified OMNI perceived exertion scale for resistance exercise⁴</p>
Exercise Selection	8-10 different exercises.	<ul style="list-style-type: none"> Include major muscle groups targeted through multi-joint movements and exercises that simulate daily activities (e.g., sit-to-stand).
Modality	Body weight, resistance band, cuff weights, machine, or free weight.	<ul style="list-style-type: none"> Isometric exercises held for at least 6 seconds (5-10 reps) may be preferable for clients who are experiencing more severe disease symptoms.⁵
Frequency	2-3 days/week per muscle group.	<ul style="list-style-type: none"> Can start with one day/week. Train on non-consecutive days (e.g., workout on Mon, Thurs, & Sat). Plan rest days when symptoms are expected to be worse (e.g., near injection days).
Progression	Progress slowly by changing volume, intensity, equipment, stability, and complexity of movements.	<ul style="list-style-type: none"> Lying, seated, kneeling, double vs single leg, stable vs unstable surface. Single vs multi-joint, combined exercises, range and plane of motion. Tempo, weight, sets, reps, rest, speed.

Notes/Assessment/Updates from Client's Form:

To be completed after strength session:

- Action plan: Activity, day and time (set expectations for having to adapt based on symptoms), where, for how long, starting when (confidence to complete plan should be at least 7/10. If not, modify):
- Next session (if applicable):

Together, trial and circle any exercises that may be appropriate based on your discussion.

Note: This program will not replace your client's therapeutic exercise prescription.

Movement	Example Exercises and Progressions			Details
"Functional Implications"	Least Challenging	←————→	Most Challenging	
Warm-Up <i>"Get ready/check how you feel"</i>	Move to raise heart rate and warm the muscles	Active, comfortable range of motion	Practice exercises and slowly raise intensity	
Increase Heart Rate	Seated March with Arm Swings	Standing March with Arm Swings	High Knees with Arm Swings	
Back Activation	Seated Shoulder Gators	X's to Y's/T's	X's to Y's/T's with March	
Hip Activation	Seated Lateral Toe and Heel Taps	Stationary Lateral Hip Openers	Front, Side, Back Toe Taps in Quarter Squat	
Shoulder Activation	Internal/External Rotation @ 0°	Banded Pull Apart with Elbows Bent	Banded Pull Apart with Elbows Straight	
Preparation to Raise Intensity	Seated Dowel Push and Press	Standing Dowel Push and Press	Squat with Dowel Push and Press	

For demonstrations of how to do these exercises, check out the [“Movement4AllLab” YouTube video series](#)

Movement "Functional Implications"	Example Exercises and Progressions			Details		
	Least Challenging	←————→	Most Challenging			
Core "Getting out of bed"	Lying Down Bent Knee Raise	Deadbug	Bird dog	Sets:	Reps:	RPE:
Rotational Core "Putting baby in the car seat"	Seated Weighted Side to Sides	Seated Paloff (Belly) Press	Standing Diagonal Cross Body Pull	Sets:	Reps:	RPE:
Lateral "Stepping to the side"	Seated Clamshells	Side Lying (or standing) Hip Abduction	Side Lunge	Sets:	Reps:	RPE:
Lunge "Going up the stairs"	Step Ups (w/ Support)	Reverse Lunge	Curtsy Lunge	Sets:	Reps:	RPE:
Horizontal Push "Opening doors"	Wall/Knee Push-Ups	Banded Chest Press	Dumbbell Bench Press	Sets:	Reps:	RPE:
Hinge/Hip Extension "Picking up objects off the ground"	Glute Bridge	Romanian Deadlift	Dumbbell Swings	Sets:	Reps:	RPE:
Horizontal Pull "Pulling weeds"	Seated Row	Standing Reverse Fly	Bent Over Row	Sets:	Reps:	RPE:
Squat "Standing up from a chair"	Quarter Wall Sit	Bodyweight Squat (w/ Chair)	Goblet Squat	Sets:	Reps:	RPE:
Vertical Push "Storing snacks on the top shelf"	Front Shoulder Raise @ 45° (thumbs up)	Shoulder Press	Arnold Press	Sets:	Reps:	RPE:
Vertical Pull "Swimming"	Straight Arm Pull Down	Lat Pulldown	Assisted Pull/Chin-Up	Sets:	Reps:	RPE:

Sets: # of groups of repetitions, **Reps:** # of times the movement is repeated,
RPE: How hard you're working on a scale of 0-10 (10 being working as hard as possible)