

Supplemental Digital Content - Progression of Exercises

A. Progression of Resistance Exercises:

1. Sets
 - Week 1-4: 2 sets
 - Week 5-8: 3 sets
2. Repetitions
 - Week 1-3: 10 reps/set
 - Week 4-6: 12 reps/set
 - Week 7-8: 15 reps/set
3. In general, progress by loop first (loop 1 = hardest), then color (Yellow > Red > Green > Blue > Black)
4. Advance resistance level according to PRE/Borg rating if alignment is correct
 - Rating 0-3: advance at next session
 - Rating 4-7: advance in next week
 - Rating 8-10: maintain same level, if form correct and participant has no complaints (i.e., pain, too much effort, etc.)

NOTE: may give instructions to (for example) maintain for session B, but increase if Borg rating is ≤ 3 for session C.

NOTE: Complaints of pain or very, very strenuous effort (i.e., a rating of 10) should take precedence to determine resistance level and whether to maintain or decrease resistance.

5. Advance the resistance bands each week by either color or length as follows
 - Length of band: shorten by 1 loop
 - Color of Band: use next intensity level band and keep the same length OR add another band at the same or longer length of current band

NOTE: Limitation is based on amount of stretch to band through given range of motion. Typical band stretch limits are of two-three times the resting length.

B. Progression of Aerobic Exercises

1. Determine HRmax + Target HR
 - Use Karvonen Formula to calculate Target HR, as it accounts for resting HR.
 - $HR_{max} = 220 - \text{age}$
 - To determine Target HR for 60% =
 - $[(HR_{max} - \text{Resting HR}) * 0.60] + \text{Resting HR}$
2. Goal
 - Progress participants over course of study to reach 60-70% of $HR_{max} = \text{Target HR}$.
 - Majority of participants should reach this threshold by Week 4.
 - Week 1-4: 40-50% HR_{max}
 - Week 4-8: 60-70% HR_{max}

NOTE: may progress to 60-70% HR_{max} sooner if participant is completing full 30 minutes at target HR, without breaks, and with low Borg rating.

EXAMPLE: 55 year old with resting HR=80bpm

- HRmax: $220 - 55 = 165$
- 40% HR: $[(165-80*0.4)+80] = 114$
- 50%HR: $[(165-80*0.5)+80] = 122.5 \rightarrow 123$
- 60%HR: $[(165-80*0.6)+80] = 131$
- 70%HR: $[(165-80*0.7)+80] = 139.5 \rightarrow 140$

Resulting in Week 1-4 ranges of 114-123bpm and Week 5-8 ranges of 131-140bpm.

- Progress participants over course of study to reach 30 minutes of aerobic activity at the Target HR.
 - Week 1-2: 3 x 10 minute intervals at Target HR with 2 minute break between
 - Week 3-4: 2 x 15 minute intervals at Target HR with 2 minute break between
 - Week 5-8: 1 x 30 minute interval at Target HR with no break

NOTE: Use clinical judgement to determine if breaks are needed for a longer period of time. Use clinical judgement to determine if no breaks are needed earlier on.

3. Warm-Up & Cool Down

- Participants should add their own warm-up/cool-down in addition to the assigned minutes of activity.

C. Functional Exercises

1. Choose 2 exercises per weekend for participant to complete
 - Always include a LEG exercise
 - Alternate between CORE/BALANCE exercises for the second exercise
2. Depending on participants functional level, choose from:

LOW LEVEL

LEG	CORE	BALANCE
Sit to Stand	Plank on elbows/ knees	Marching
Mini-Squat	Side Plank on elbow/knee	Tandem Stance
	Hundreds feet supported	Standing Leg Raises

MEDIUM LEVEL

LEG	CORE	BALANCE
Staggered Sit to Stand	Plank elbows/feet	Marching on Foam/Pillow
Staggered Mini-Squat	Side Plank on elbow/feet	Single Leg Stance
Small Lunges, all directions	Russian Twist, feet on ground	Tandem Stance on Foam/Pillow
	Hundreds feet unsupported	

HIGH LEVEL

LEG	CORE	BALANCE
Chair Pose	Plank on hands/feet	Tree Pose
Small lunges, deeper lunge, all directions	Side Plank on hand/feet	Single Leg Stance on Foam/Pillow
Squat Walk	Russian Twist, feet off ground	Warrior Sequence
	Hundreds, legs extended	

3. Progress to higher level and/or progression of exercise based on Borg Rating.
 - a. Rating 0-3: Progress to higher level
 - b. Rating 4-7: Maintain current level, increase reps/sets
 - c. Rating 8-10: Maintain current level, maintain current reps/sets