



Autonomic Dysfunction Exercise Program

Symptoms of autonomic dysfunction, dysautonomia, and/or postural orthostatic tachycardia syndrome (POTS) can be very frustrating and interfere with everyday life. It isn't clear why youth develop dysautonomia or autonomic dysfunction. One way to think about it is a software problem. The “hardware” or bones, muscles, organs, and other structural parts of the body are healthy. However, the “software” has malfunctioned sending disrupted signals to the brain about pain, dizziness and other associated symptoms.

The development of dysautonomia is best understood through the biopsychosocial model. This means that biological, psychological, and social factors all combine to contribute to the development of dysautonomia. Biological factors include things such as genetics, injuries, previous medical conditions, and lifestyle habits. Psychological factors include memories and experiences with pain, symptoms, or medical procedures and general coping style. Social factors include family experiences with pain and symptoms, community responses to pain and symptoms, cultural expectations of how pain and symptoms are managed, and health care access.

Included is information on Nemours’ recommended exercise training program which utilizes the Dallas Protocol calendar. Everyone will begin at a different starting point the protocol. Making exercise a regular part of you, or your child’s life, will be one step towards “resetting” the software of the autonomic nervous system and decreasing the impact of symptoms on everyday life. The program is based on research completed by Dr. Benjamin Levine at Texas Health Presbyterian Hospital in Dallas, Texas and has been adapted to help individuals experiencing symptoms of autonomic dysfunction begin treatment themselves.

Some individuals can independently complete this program, while others benefit from the guidance of a trained physical therapist to oversee their progress. Consistency is key and ongoing participation in healthy exercise habits is essential in creating long lasting results. If you are in need of guidance, please contact your physician for a physical therapy prescription and call 866-291-5414 to be scheduled with one of our autonomic dysfunction specialists at Nemours. If you have underlying conditions that may require individual guidance (ie. hypermobility, orthopedic conditions or injuries), a physical therapy consultation is highly recommended prior to beginning this program.

What you need

This training program can be completed without any equipment at all. However, the more equipment you have access to, the more individualized you can make your activity. Gym memberships are a great way to increase access to equipment and can add social benefits as well. Many gyms have student discounts that may be worth looking into before starting this program.

Below is a list of potential equipment and/or alternative methods of training that may be useful for your success in this program. If you do not have access to any equipment, you can be just as successful with walking and the body weight exercises outlined below.

Cardiovascular equipment: bike (stationary, road or peddler), rower, elliptical, treadmill

Strength equipment: resistance bands, free weights, weight machines

Alternative exercise modes: yoga, Pilates, swimming

Training Calendars- Cardiovascular Exercise

Cardiovascular training is exercise that increases your heart rate to help make your heart stronger and increase your tolerance for activity. The following protocol can be used to guide you through your workouts each week.

The Dallas protocol consists of calendars listing cardiovascular workouts beginning with three days each week. It is important to perform cardiovascular exercise at least three days per week to help retrain your autonomic nervous system and decrease your symptoms of autonomic dysfunction. You can perform the workouts on any three days of the week based on your schedule or ability but try not to complete cardiovascular exercise three days in a row followed by no cardiovascular activity the remainder of the week. Based on current exercise level and fitness tolerance, it may be recommended that you begin with a mode of cardiovascular exercise in which you are horizontal. Examples include a recumbent bicycle (pedals in front), rowing machine, swimming or kicking laps (with a kickboard).

There are eight calendars in total. Months 1 and 2 contain the least intense workouts. Your physician or physical therapist will tell you which calendar to follow for your exercise program. Follow your calendar each week to complete the cardiovascular exercise. If you miss a day, or several days, simply start where you left off. Never try to skip days on the calendar or catch up to where you think you should have been. The workouts get harder as you move through the calendars, with each month becoming slightly harder than the last. As you progress through the calendars, you may begin to try other types of exercise as you feel you are able to. For example, some people can begin using an upright stationary bike in Month 2 and an elliptical or treadmill walking in Months 3 and 4.

Each workout on the calendar lists different intensity zones for exercise. These intensity zones alternate between high and low intensity in order to work your heart more efficiently and effectively. To understand the exercise intensities that you are to be working in, you will need to use the Ratings of Perceived Exertion (RPE) scale. This scale requires you think about how you are feeling while exercising and convert it into a number (see scale below). Then, an RPE value is assigned to each training intensity zone. The RPE scale allows you to focus on how you are feeling as opposed to a specific number appearing on your monitoring device. Every few minutes while exercising, recheck how you are feeling to determine if you are working hard enough or too hard for the zone you are currently completing.

Rate of Perceived Exertion Scale (RPE)

6 is very, very easy

11 is fairly easy

13 is somewhat hard

15 is hard

17 is very hard

19 is very, very hard

Training Intensity Zone	Expected RPE Values
Warm up/recovery/cool down	6-12
Base Pace	13-15
Maximal Steady State (MSS)	16-19
Intervals	19-20

Training Calendars- Strength Training

Strength training is a type of exercise that makes your muscles stronger. Improved strength allows you to complete activities in your daily life more easily, improving your ability to conserve daily energy. In autonomic dysfunction, there is often insufficient return of blood flow to the heart. Since the muscles of the legs work to pump blood back to your heart, strengthening these muscles can improve blood flow to the heart, decrease abnormal changes in heart rate while standing, and decrease symptoms such as dizziness. For this reason, you have been given strengthening exercises primarily for your leg and core muscles; however, upper body strengthening can and should be included. The exercises given to you should only require bodyweight, and do not require additional equipment or free weights. They often begin in seated and lying down positions, progressing to standing as your symptoms allow. Just like with cardiovascular exercise, as you progress through the calendars, you can begin standing exercise as tolerated and gradually introduce the use of weights as appropriate.

The calendars instruct you to complete strengthening exercises on the days between your cardiovascular exercise. This is recommended so that you do some exercise each day. You should not complete strength training exercise on consecutive days as a day of rest in between strength training sessions allows your muscles to recover. It is important to remember that any time you begin new strength training exercises, your muscles may be sore for 1-3 days afterwards. This is normal and is part of your muscles getting stronger. If muscle soreness persists, consider decreasing the intensity of your strength program and gradually build it back up. If further assistance is needed, contact your provider for guidance.

Exercise as Part of Your Lifestyle

You will hopefully find that participating in this exercise program will help you feel better and be able to do more in your day-to-day life. The benefits of exercise on improving your symptoms and overall function can take time to notice, so don't give up! It will be important for you to continue exercising even after you

make it through the calendars. Some choose to continue using the calendars for guidance, while others choose to progress to a more individualized or preferred activity type that allows them to remain active. Continuing with an exercise program of some sort will help you prevent recurrence or exacerbation of symptoms in the future.

Other Helpful Tips

- As with any exercise, it takes time to see positive changes and results when treating autonomic dysfunction. It is common that you will see improvement in function before you see changes in symptoms. Do not give up. Consistency is key in creating long lasting effects. Creating and maintaining a regular exercise program is necessary in reducing the functional impact of autonomic dysfunction on your daily life and reducing frequency and intensity of symptoms.
- Invite a family member or friend to exercise with you. Use your support system to make exercise fun and help keep you motivated to improve.
- Maintaining a consistent exercise program is only one part of treating autonomic dysfunction. Remember to maintain proper hydration, nutrition (especially prior to exercise), sleep, cognitive and emotional habits as well. Consider activities such as yoga or meditation as additional means for creating a healthy mind and body.
- Find a mode of exercise that works for you. If your symptoms tend to worsen in the heat, choose an activity that is indoors instead. Maintaining a consistent exercise program should become a part of your daily life, so find something you enjoy doing!

Please keep track of your exercise progress. This can be done on the calendar, on another piece of paper, on your phone, or on a computer. It is helpful to keep track of your progress to alert your healthcare provider of progress, difficulty, or changes in your symptoms. Please keep a list of questions you may have for your healthcare provider as well as exercises that are too hard or too easy so they can be adjusted.

Good luck as you begin your exercise program! Remember that the team is here for you if you have any questions or concerns regarding your exercise program. Please do not hesitate to contact us if you have questions or require further guidance.

If deemed appropriate you may benefit from physical therapy at one of our outpatient sites or through our specialized Integrated Pain and Wellness Program. Because dysautonomia is complex, your child may work with many different experts on their care team. Treatment may include physical and/or occupational therapy, integrative therapies (for example, yoga, massage), cognitive behavioral therapy for pain management, lifestyle changes (for example, drinking water, good sleep, increasing salt intake), and medications (when needed) to help your child return to everyday activities. This team approach helps to address all the factors in the biopsychosocial model of pain to retrain your child's "software" — and get them back to school and other activities.

Contact Us: (must have physical therapy script from physician for scheduling)

Outpatient physical therapy services: Call 866-291-5414 to schedule an evaluation

Integrated Pain and Wellness Program: Call 302-651-6038 or send an inquiry to rf-wlmintegratedpain-wellness@nemours.org

Month 1

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Training Mode 1 5-10 min Warm Up 3 min Base Pace 2 min recovery 3 min Base Pace 5-10 min Cool down	Strength Training	Training Mode 1 5-10 min Warm Up 3 min Base Pace 2 min recovery 3 min Base Pace 5-10 min Cool down	Strength Training	Training Mode 1 5-10 min Warm Up 3 min Base Pace 2 min recovery 3 min Base Pace 5-10 min Cool down	
	Training Mode 1 5-10 min Warm Up 4 min Base Pace 3 min recovery 4 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 4 min Base Pace 3 min recovery 4 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 4 min Base Pace 3 min recovery 4 min Base Pace 5-10 min Cool Down	
	Training Mode 1 5-10 min Warm Up 5 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 5 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 5 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	
	Training Mode 1 5-10 min warm Up 6 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 7 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	Strength Training	Training Mode 1 5-10 min Warm Up 7 min Base Pace 3 min recovery 5 min Base Pace 5-10 min Cool Down	

Training Mode 1 = any of supine cycling, recumbent bike, swimming laps with a kick board, rowing, seated stepper Recovery = slow down, reduce resistance, get a drink, but don't stop moving. Warm ups and cool downs are done starting very slowly with little or no resistance and leading up to and out of your Base Pace HR zone Physical therapist can begin with supine cycling only if a patient is beginning program as wheel-chair bound/bedridden.
Weight training can be done on the same days as cardio workouts if necessary.

Month 2

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Training Mode 1 10 min Warm Up 6 min Base Pace 2 min recovery 6 min Base Pace 2 min recovery 6 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 7 min Base Pace 2 min recovery 7 min Base Pace 2 min recovery 7 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 8 min Base Pace 2 min recovery 8 min Base Pace 2 min recovery 8 min Base Pace 10 min Cool down	
	Training Mode 1 10 min Warm Up 6 min Base Pace 2 min recovery 6 min Base Pace 2 min recovery 6 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 5 min Base Pace 2 min recovery 5 min Base Pace 2 min recovery 5 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 5 min Base Pace 2 min recovery 5 min Base Pace 2 min recovery 5 min Base Pace 10 min Cool down	
	Training mode 1 10 min Warm Up 10 min Base Pace 3 min recovery 10 min Base Pace 10 min cool down	Strength Training	Training mode 1 10 min Warm Up 11 min Base Pace 3 min recovery 11 min Base Pace 10 min cool down	Strength Training	Training mode 1 10 min Warm Up 12 min Base Pace 3 min recovery 12 min Base Pace 10 min cool down	
	Training mode 1 10 min Warm Up 13 min Base Pace 3 min recovery 13 min Base Pace 10 min cool down	Strength Training	Training mode 1 10 min Warm Up 14 min Base Pace 3 min recovery 14 min Base Pace 10 min cool down	Strength Training	Training mode 1 10 min Warm Up 15 min Base Pace 3 min recovery 15 min Base Pace 10 min cool down	
	Training mode 1 10 min warm Up 20 min Base Pace 10 min Cool down	Strength Training	Training mode 1 10 min warm Up 24 min Base Pace 10 min Cool down	Strength Training	Training mode 1 10 min warm Up 28 min Base Pace 10 min Cool down	

Training Mode 1 = any of supine cycling, recumbent bike, swimming laps with a kick board, rowing, seated stepper Recovery = slow down, reduce resistance, get a drink, but don't stop moving.

Warm ups and cool downs are done starting very slowly with little or no resistance and leading up to and out of your Base Pace HR zone Weight training can be done on the same days as cardio workouts if necessary.

Month 3

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	
	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 20 min MSS 10 min Cool down	Training Mode 40 min recovery
	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	
	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down	Strength Training	Training Mode 1 10 min Warm Up 25 min MSS 10 min Cool down	Training Mode 1 40 min recovery	Strength Training	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool down

Training Mode 1 = any of Recumbent Biking, Swimming, Rowing, seated stepper Training Mode 2 = upright bike

Weight Training can be done on the same days as Cardio workouts if necessary

Month 4

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Training Mode 1 10 min Warm Up 30 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 10 min Warm Up 20 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 10 min Warm Up 20 min Base Pace 10 min Cool Down	
Training Mode 1 or 2 10 min Warm Up 30 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 10 min Warm Up 30 min Base Pace 10 min Cool Down	Strength Training	Training Mode 1 or 2 10 min Warm Up 25 min MSS 10 min Cool Down	Training Mode 1 40 min recovery	
Training Mode 1 or 2 10 min Warm Up 40 min Base Pace 10 min Cool Down	Strength Training		Training Mode 1 or 2 10 min Warm Up 30 min MSS 10 min Cool Down	Training Mode 1 40 min recovery	Strength Training	Training Mode 1 or 2 10 min Warm Up 35 min Base Pace 10 min Cool Down
	Strength Training	Training Mode 1 or 2 10 min Warm Up 35 min MSS 10 min Cool Down	Training Mode 1 40 min recovery	Training Mode 2 or 3 10 min Warm Up 30 min Base Pace 10 min Cool Down	Strength Training	Training Mode 1-2 10 min Warm Up 40 min Base Pace 10 min Cool Down

Training Mode 1 = any of Recumbent Biking, Swimming, Rowing

Training Mode 2 = upright bike

Training Mode 3 = Treadmill walking (flat grade), Elliptical (stationary arms)

Training mode 4 = Treadmill walking (incline), Elliptical (with use of arms). Can progress to jogging if able. Weight Training can be done on same days as Cardio workouts if necessary.

Month 5

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Training Mode 2 or 3 10 min Warm Up 35 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 or 3 10 min Warm Up 35 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 or 3 10 min Warm Up 35 min Base Pace 10 min Cool Down	
	Training Mode 2 or 3 10 min Warm Up 40 min Base Pace 10 min Cool Down	Strength Training	Training Mode 3 10 min Warm Up 3 min MSS 10 min Cool Down	Training Mode 2 or 3 40 min recovery Strength Training	Training Mode 2 or 3 10 min Warm Up 35 min Base Pace 10 min Cool Down	
	Training Mode 2-3 10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 or 3 10 min Warm Up 3 min Base Pace 10 min Cool Down	Training Mode 3 10 min Warm Up 35 min MSS 10 min Cool Down	Training Mode 2 or 3 25 min recovery Strength Training	Training Mode or 3 10 min Warm Up 50 min Base Pace 10 min Cool Down
	Training Mode 3 10 min Warm Up 35 min Base Pace 10 min Cool Down	Strength Training	Training Mode 2 or 3 10 min Warm Up 45 min Base Pace 10 min Cool Down	Training Mode 3 10 min Warm Up 40 min MSS 10 min Cool Down	Training Mode 2 or 3 25 min recovery Strength Training	

Training Mode 2 = upright bike

Training Mode 3 = Treadmill walking (flat grade), Elliptical (stationary arms) Training mode 4 = Treadmill walking (incline), Elliptical (with use of arms). Weight Training can be done on same days as Cardio workouts if necessary. Weight training can be done on same days as Cardio workouts if necessary

Month 6

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 40 min Base Pace 10 min Cool Down	10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 45 min Base Pace 10 min Cool Down	
Strength Training	10 min Warm Up 30 min Base Pace 10 min Cool Down	10 min Warm Up 3x1 min Intervals 10 min Cool Down 20 min recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 30 min MSS 10 min Cool Down	
Strength Training	10 min Warm Up 35 min Base Pace 10 min Cool Down	10 min warm Up 35 min MSS 10 min Cool Down	Strength Training	10 min Warm Up 4x1 min Intervals 10 min Cool Down 20 min recovery	10 min Warm Up 40 min Base Pace 10 min Cool Down	25 min recovery
10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 5x1 min Intervals 10 min Cool Down 20 min Recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 30 min Base Pace 10 min Cool Down	10 min Warm Up 30 min MSS 10 min Cool Down

Training modes are not listed because individuals should continue to progress to upright modes as they can tolerate. We recommend beginning Interval training on the rower, upright bike or elliptical. Can progress to jogging as able. Weight Training can be done on same day as Cardio if necessary

Month 7

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 45 min base Pace 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 60 min Base Pace 10 min Cool Down
Strength Training	10 min Warm Up 5x2 min Intervals 10 min Cool Down 20 min Recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 40 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 40 min MSS 10 min Cool Down	
10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 5x2 min Intervals 10 min Cool Down 20 min Recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 5x2 min Intervals 10 min Cool Down 20 min Recovery	Strength Training	10 min Warm Up 40 min MSS 10 min Cool Down
10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 40 min MSS 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 5x2 min Intervals 10 min Cool Down 20 min Recovery	Strength Training	10 min Warm Up 60 min Base Pace 10 min Cool Down

Training modes are not listed because individuals should continue to progress to upright modes as they can tolerate. We recommend beginning Interval training on the rower, upright bike or elliptical. Can progress to jogging if able. Weight Training can be done on same day as Cardio if necessary

Month 8

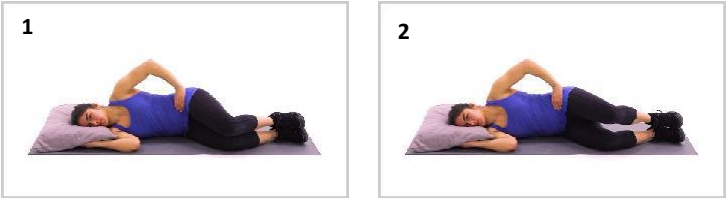
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Strength Training	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 40 min MSS 10 min cool Down	
10 min Warm Up 60 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 45 min MSS 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 7x2 min Intervals 10 min Cool Down 20 min Recovery
Strength Training	10 min Warm Up 5x3 min Intervals 10 min Cool Down 20 min Recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 45 min MSS 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 5x3 min Intervals 10 min Cool Down 20 min Recovery	Strength Training
10 min Warm Up 60 min Base Pace 10 min Cool Down	Weight Training	10 min Warm Up 10x2 min Intervals 10 min Cool Down 20 min recovery	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min warm Up 45 min MSS 10 min Cool Down	Strength Training	10 min Warm Up 60 min Base Pace 10 min Cool Down
Strength Training	10 min warm Up 45 min MSS 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	Strength Training	10 min Warm Up 45 min Base Pace 10 min Cool Down	10 min Warm Up 45 min Base Pace 10 min Cool Down	

Training modes are not listed because individuals should continue to progress to upright modes as they can tolerate We recommend beginning Interval training on the rower, upright bike or elliptical. Can progress to jogging if able. Weight Training can be done on same day as Cardio if necessary

Autonomic Dysfunction Exercises: Phase 1

Clamshell

REPS: 10	SET(S) PER SIDE: 2	DAILY: 1	WEEKLY: 7
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Setup

Begin lying on your side with your knees bent and your hips and shoulders stacked.

Movement

Engage your abdominals and raise your top knee up toward the ceiling, then slowly return to the starting position and repeat.

Tip

Make sure to keep your core engaged and do not roll your hips forward or backward during the exercise.

Supine Bridge with Mini Swiss Ball Between Knees

SETS: 2	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin lying on your back with your legs bent, feet resting on the floor, and a ball between your knees.

Movement

Engage your abdominals as you gently squeeze the ball between your knees and lift your hips off the ground into a bridge position. Hold briefly, then lower back down to the ground and repeat.

Tip

Make sure to keep your core engaged and your movements slow and controlled. Do not let your hips rotate to either side during the exercise.

Hooklying Isometric Hip Flexion with Opposite Arm

REPS: 5	HOLD: 5SEC	SET(S) PER SIDE: 2	DAILY: 1
WEEKLY: 7			



Setup

Begin lying on your back with your knees bent and feet resting on the floor.

Movement

Bend one leg up to a 90-degree angle and place your opposite hand on your knee. Engage your abdominals, then try to bend your leg toward your chest while resisting the movement with your hand. Return to the starting position and repeat with the opposite arm and leg.

Tip

Make sure to keep your abdominals engaged and do not arch your low back during the exercise.

Supine March

SETS: 2	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin lying on your back with your arms resting at your sides, your knees bent and your feet flat on the ground.

Movement

Tighten your abdominals and slowly raise one of your legs off the floor, keeping your knee bent. Then return to the starting position and repeat with your other leg.

Tip

Make sure to keep your trunk stiff during the exercise and do not let your low back arch.

Seated Long Arc Quad with Hip Adduction

SETS: 2

REPS: 10

DAILY: 1

WEEKLY: 7

1



2



Setup

Begin sitting upright with a ball between your knees.

Movement

Gently squeeze the ball with your knees, then straighten your leg. Hold briefly, then return to the starting position and repeat.

Tip

Make sure to keep your back straight and focus on tightening the muscles on the front of your thigh as you straighten your leg.

Seated March

SETS: 2

REPS: 10

DAILY: 1

WEEKLY: 7

1



2



Setup

Begin sitting upright in a chair with your feet flat on the floor.

Movement

Keeping your knee bent, lift one leg then lower it back to the ground and repeat with your other leg. Continue this movement, alternating between each leg.

Tip

Make sure to keep your back straight and do not let it arch as you lift your legs.

Autonomic Dysfunction Exercises: Phase 2

Seated Dumbbell Rows

SETS: 2	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin sitting upright in a chair with elbows bent holding a dumbbell in each hand.

Movement

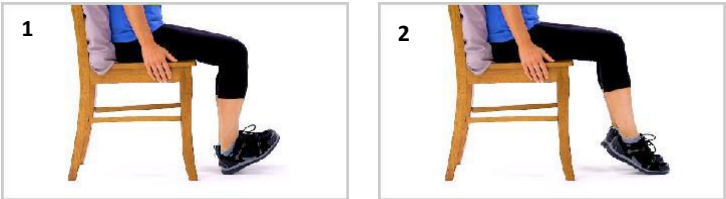
Press your arms forward, straightening your elbows, then pull them back towards your body, squeezing your shoulder blades together at the end.

Tip

Make sure to keep your trunk upright and back straight throughout the motion.

Seated Heel Toe Raises

SETS: 2	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin sitting upright with your feet shoulder width apart.

Movement

Slowly raise your heels off the floor and lower them back down, then raise your toes off the floor and lower them back down. Repeat.

Tip

Make sure to keep the balls of your feet on the floor when you raise your heels, and keep your heels on the floor when you raise your toes

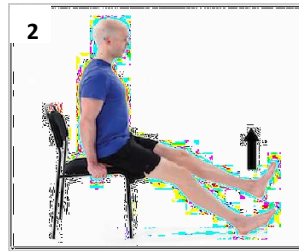
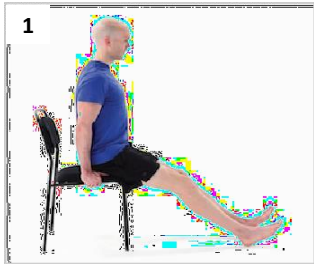
Seated Small Alternating Straight Leg Lifts with Heel Touch

SETS: 2

REPS: 10

DAILY: 1

WEEKLY: 7



Setup

Begin sitting in a chair with your legs straight in front of your body, holding on to the chair for support.

Movement

Lift your legs off the ground and move them up and down in small alternating motions, touching your heels to the floor in between.

Tip

Make sure to maintain your balance and keep your back straight during the exercise.

Sit to Stand

SETS: 2

REPS: 10

DAILY: 1

WEEKLY: 7



Setup

Begin sitting upright with your feet flat on the ground underneath your knees.

Movement

Move your shoulders and head over your toes, bring your knees forward, and allow your hips to come off the chair, then push down equally into both feet to stand up. Sit back down and repeat.

Tip

Make sure to keep your weight evenly distributed between both legs, and try to keep your back straight throughout the exercise. Do not lock out your knees once you are standing.

Standing 3-Way Kick

REPS: 5	SET(S) PER SIDE: 3	DAILY: 1	WEEKLY: 7
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Setup

Begin in a standing upright position.

Movement

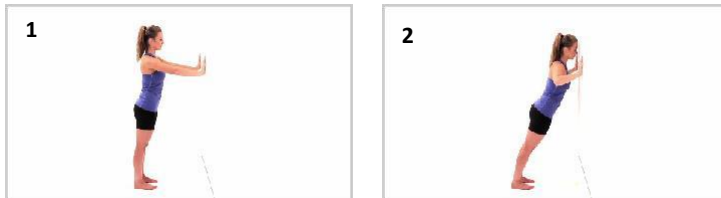
Balancing on one leg, slowly lift your opposite leg straight forward, out to your side, and backward. Repeat.

Tip

Make sure to keep your toes pointing forward and your leg straight during the exercise.

Wall Push Up

SETS: 2	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin in a standing upright position with your arms straight and your hands resting on a wall at shoulder height.

Movement

Bend your elbows, leaning your body toward the wall, then push yourself back into the starting position and repeat.

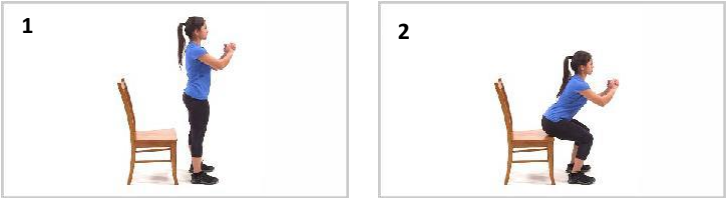
Tip

Make sure to bend only at the elbows and keep the rest of your body straight during the exercise

Autonomic Dysfunction Exercises: Phase 3

Squat with Chair Touch

SETS: 3	REPS: 10	DAILY: 1	WEEKLY: 7
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Setup

Begin in a standing upright position in front of a chair.

Movement

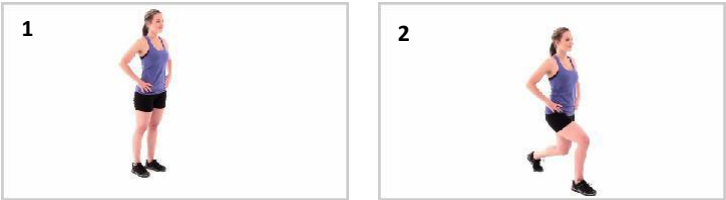
Lower yourself into a squatting position, bending at your hips and knees, until you lightly touch the chair. Return to the starting position and repeat.

Tip

Make sure to maintain your balance during the exercise and do not let your knees bend forward past your toes.

Mini Lunge

REPS: 10	SET(S) PER SIDE: 2	DAILY: 1	WEEKLY: 7
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Setup

Begin in a standing upright position.

Movement

Step forward with one foot and lower down into a mini lunge position. Return to standing and repeat on the other leg.

Tip

Make sure to maintain your balance and do not let your front knee move forward past your toes.

Step Up

SETS: 3

REPS: 10

DAILY: 1

WEEKLY: 7

1



2



Setup

Begin standing with a small step or platform in front of you.

Movement

Step up onto the platform with one foot then follow with your other foot. Return back down to the starting position and repeat.

Tip

Make sure to maintain good posture during the exercise and do not let your knee bend forward past your toe as you step up.

Single Leg Running Balance

REPS: 10

SET(S) PER SIDE : 2

DAILY: 1

WEEKLY: 7

1



2



Setup

Begin in a standing upright position.

Movement

Bend one leg and your opposite arm into a running position, then straighten your bent leg, lean forward, bend your other arm, and bend your standing leg. Return to the starting position and repeat.

Tip

Make sure to maintain your balance during the exercise. Do not let your knee collapse inward.

Plank with Hip Extension

REPS: 5

SET(S) PER SIDE: 3

DAILY: 1

WEEKLY: 3-5

1



2



Setup

Begin on all fours.

Movement

Move your body forward into a plank position, with your elbows on the ground. Maintaining this position, lift one foot straight backward off the floor, then lower it back down and repeat with your other foot.

Tip

Make sure to keep your back straight and core engaged. Do not let your hips rotate to either side as you lift your legs.

Full Plank with Shoulder Taps

REPS: 5

SET(S) PER SIDE: 3

DAILY: 1

WEEKLY: 7

1



2



Setup

Begin on all fours then straighten your legs to bring yourself into a plank position.

Movement

Hold this position and lift one hand off the ground to tap your opposite shoulder. Return to starting position and repeat with your other hand.

Tip

Make sure to keep your abdominals tight and keep your back straight during the exercise. Do not let your trunk rotate.