

**University of Virginia Renal Services  
SitFit Exercise Program  
Policies and Procedures Manual for  
UVA Dialysis Staff**



## **Exercise Program Policies and Procedure for UVA Renal Services Floor Staff**

The exercise program here, called the SitFit Exercise Program, is one of very few such programs in the United States. Most dialysis units, despite overwhelming evidence that shows exercise actually helps improve physical functioning in these patients, don't exercise their patients.

Every new patient will now be evaluated for exercise. A handout on exercise is now a part of their new patient packet upon coming to the unit. Granted, not every patient will be able to exercise, or want to but everyone should be evaluated. When a new patient comes to dialysis, the Exercise Physiologist will usually wait a few weeks to speak to them due to physical and physiological changes that occur upon the start of dialysis. If a staff member thinks the patient is a good candidate for exercise (see inclusion and exclusion criteria in pod book), then you can contact Mandy Newberry, Exercise Physiologist via email ([alh9t@virginia.edu](mailto:alh9t@virginia.edu)) and she will come evaluate and start the patient on an exercise program.

### **Why Should We Exercise Our Patients??**

The scientific evidence for exercise in these patients clearly show benefits in physiological, functional, and vocational outcomes. Specifically, exercise while on dialysis has been shown to improve blood circulation in the lower extremities thus enhancing the dialysis treatment. This results in better clearances (improved Kt/V profiles), and could perhaps prevent the MD's from adding dialysis time to the patient in the future. Exercise training has been shown to improve lipid profiles, blood pressure, stabilize blood sugars, improve sleep, prevent hospitalizations, improve physical strength and endurance, prevents falls, helps the certain patients with ambulating, decreases the risk for heart complications, and improves the patient's sense of well-being.

### **Is Exercise Safe?**

There have been no untoward events at UVA as a direct result of exercise and the risk of exercise is low. The American College of Sports Medicine states that cardiac rehabilitation programs are extremely safe. According to certain reports, 1 major cardiovascular complication occurs in ever 60,000 patient exercise hours of outpatient cardiac exercise therapy (most ESRD patient have compromising cardiac profiles). The risk of exercise in the morning appears to be no greater than that in the afternoon so all the shifts could benefit from exercise. These numbers were based on cardiac rehabilitation patients, a population that is generally healthier than ESRD patients so the risk is a bit higher in this population however, no studies exist on the safety of exercise in this population. Patients with severe bone disease and unstable angina should not exercise. Medical clearance from a nurse practitioner or MD is required for all patients to exercise.

### **Staff Encouragement**

The staff is expected to encourage the patients to exercise during their treatments as well as at home. If a patient is interested in exercising at home, contact Mandy at [alh9t@virginia.edu](mailto:alh9t@virginia.edu). Also, patients that are able should be encouraged to walk from the elevators or front doors to the scales to their chairs however, most patients will not be able to do this post treatment due to fatigue and the higher risk of hypotension.

### **Exercise Bikes**

The Monarch 881E Rehab Trainer are the bikes of choice for the exercise program. However, there are several problems with the bikes that occur frequently. The most common problem is that the bolts for the pedals become loose after extended use. The way to fix this (the floor staff can temporarily fix it) is to take the crank that is in front of the bike and tighten the bolts so they are not loose. The staff should contact Mandy if a certain bike becomes consistently loose. Several units use the Oxystepper that has less of a cardiovascular exercise effect but still is useful to improve circulation during dialysis.

## **Treadmill**

The Kidney Center is the only unit that has a treadmill for the patients. The patient is encouraged to walk on the treadmill before the dialysis treatment as post treatment exercise increases the chances of hypotensive responses. The patient should get vitals taken prior to walking on the treadmill including body weight.

## **OxyStepper**

The Oxystepper is a good mode of exercise for those patients that can't reach the pedals of the cycle. The OxyStepper needs to be bound to the dialysis chair via rope ratchets. Many chairs have the foot rest that can be used to place the Oxystepper on.

## **Hand/Leg Weights**

The hand and leg weights have been shown to improve upper and lower extremity strength levels perhaps leading to less falls. It is recommended that the patient do the weights prior to being put on the machine so the movements involved in doing the exercises does not disrupt the dialysis treatment however some patients will not have a problem doing the exercises while on dialysis. Performing weight exercises (unless at high weights) will NOT harm the access. The most common hand weight exercises for those on dialysis are the following:

- Arm Curls
- Shoulder Press
- Wrist Curls

Patients that start on hand weights should do 1-2 sets x 15-20 repetitions at a low weight. The most a patient should do on at a given weight is 3 sets x 20 repetitions in order to prevent muscle damage. Other exercises can be added per patient request.

## **TheraBands**

Therabands is an excellent alternative exercise for the patients at home. Therabands are not to be used during dialysis and Mandy should be contacted if a patient is interested in starting a home program with therabands.

## **Exercise Prescription**

Not every patient can exercise (roughly 30% of all UVA dialysis patient have exercise orders) but the exercise program should be tailored so the patient can tolerate it during their treatments. Cycling tends to be the most popular because it's simple but some patients can't reach the pedals so weights should be used. The focus of the exercise is to provide duration of exercise rather to intensity of exercise. Most patients are recommended to start with 5-10 min of cycling and add one minute each week for a goal of 30-60 min cycling per treatment. Some patients can do more than 60 min but need to be evaluated by Mandy first.

## **Exercise Procedures**

Pre-exercise vitals should be monitored, specifically blood pressure pre exercise, at five minutes into exercise and post exercise. The cut-off for pre exercise blood pressure is  $\geq 200/110$  mmHg. If a patient presents with a blood pressure at or above this level, the staff should wait about twenty minutes while fluid is taken off and then check again. If the blood pressure is below the threshold at that point, the staff can start the patient on the exercise. Exercise is generally done within the first hour of their dialysis treatment in order to prevent exercise induced hypotension in these patients however, some patients prefer to exercise later in their treatment. This is ok as long as they are stable and their blood pressure is normal. **Exercise is considered a medication at UVA and must be checked off on the daily standing orders.** Specific exercises will be written as unique orders on the AMI program to remind the staff what a particular patient does as a far as exercise.

### WHO SHOULD EXERCISE?

1. All new patients should be assessed for exercise
2. Patients that are hemodynamically stable
3. RN notes that patient is getting weaker
4. Patient mentions he/she is getting weaker
5. Patient wants to exercise



### PATIENTS THAT SHOULD BE EXERCISING AT DIALYSIS

1. Patients with no musculoskeletal impairments
2. Patients that sustain stable dialysis treatments
3. Patients that vitals (blood pressure/Glucose) are within guidelines for exercise
4. Patients with no concurrent medical conditions that may contraindicate exercise
5. Patients that want to exercise
6. Patients with stable cardiac profiles



### PATIENTS THAT SHOULD NOT EXERCISE AT DIALYSIS

1. Patients with functional limitations affecting his/her ability to use cycle (may be able to use weights)
  2. Patients with compromising cardiac profiles
  3. Patients that are hemodynamically unstable on dialysis
  4. Patients with severe bone disease
  5. Patients with poorly functioning catheter
- These patients may be able to exercise at home or at another setting (cardiac rehab)**



### REASONS TO EXERCISE AT DIALYSIS

1. Patients complains of lack of energy
2. Patients complains of feeling weak overall
3. Patient complains of leg weakness
4. Patient complains of loss of balance or falling
5. Patient would like to be more toned
6. MD would like patient to exercise to improve Kt/V
7. Dietician recommends patient exercises to improve lipids
8. Patients are bored or restless on dialysis
9. Patient wants to exercise to make the time go by

### STOP

Refer back to MD or NP for further evaluation or physical therapy/cardiac rehab referral

### EXERCISE PROCEDURE

1. Leave a note for Exercise Physiologist in pod book to evaluation of patient (exercise order added by EP)
2. Refer to Unique Orders for exercise prescription (also found in Exercise Pod Book)
3. Warm-up with stretches
4. Start patient on cycle and check vitals
5. Start patients at 5-10 min and add 1 min per session
6. For low level patients, exercise duration should be 5-30 min
7. For higher functional patients, exercise duration should be 30-60 min
8. Stop exercise if patient becomes hypertensive, tachycardic, or exhibits adverse medical reaction
9. Aim for a goal for 30 min 3x/week. The more the better!

# Exercise Decision Tree



## Pre Exercise Complications

Situation	Recommendation
Patient not interested in exercise	<p>Rule out medical/physical reasons</p> <p>Discuss benefits of exercise and encourage regular participation</p> <p>Identify barriers/concerns with the exercise as well as past exercise history</p>
Patient is asleep and/o is uninterested in exercising when asked and /or does not ask for the exercise bike or weights	<p>Exercise immediately after put on the dialysis machine</p> <p>Defer exercise on that day</p> <p>Exercise earlier in treatment the next session</p>
Pre exercise hypotension (SBP < 100 mmHg)	<p>Try isometric contractions of arms and legs before and during bike setup (may increase blood pressure)</p> <p>Defer exercise on that day</p> <p>Exercise earlier in the treatment the next session</p>
Pre exercise hypertension (200/110 mmHg)	<p>Delay exercise to later in treatment (pull fluid off)</p> <p>Start exercise slowly with longer warm up and decrease intensity</p> <p>Assess anxiety level of patient and usual BP readings.</p>
Consistent high Potassium pre dialysis	<p>Exercise in the second hour of treatment</p>
Tachycardia	<p>Assure no arrhythmia that is atypical for that patient</p> <p>Start exercise slowly with longer warm up and decrease intensity</p> <p>Defer exercise if symptomatic and/or abnormal for patient</p>
Access/ site insertion problems	<p>Defer exercise on that day; if patient chooses to exercise, attempt to minimize movement</p>
Recent hospitalization	<p>Upon return, progress slowly and gradually back up to previous exercise level (both intensity and duration should be decreased and gradually increased as patient recovers)</p>
Patient feels ill or nauseous or c/o chest discomfort (typical of angina), dyspnea, and/or headache	<p>Defer exercise for that day- notify MD for assessment of condition</p> <p>No exercise until resolved and/or re-referred</p>
Foot/ankle sore or ulcer	<p>No exercise if biking will put pressure on it, but if pressure is not put on the sore, the increased circulation may help the sore heal</p>

**Post Exercise Complications Protocol**

## Post Exercise Complications

<b>Situation</b>	<b>Recommendation</b>
Hypotension- may be unresponsive to saline due to exercise induced vasodilation	<p>Increase cool down time</p> <p>Exercise earlier in the treatment</p> <p>Re-evaluate BP medications</p> <p>Elevate feet</p> <p>Encourage isometric contractions of arms and legs</p> <p>If patient is frequently hypotensive at target dry weight, reassess dry weight because there is potential that the patient's dry weight has increased due to increased muscle mass</p>
Persistent angina, dyspnea, arrhythmia, and/or headache	Refer to MD- no exercise until resolved and/or re-referred
Persistent tachycardia	<p>Increase cool down time during next session</p> <p>Decrease intensity of exercise during next session</p> <p>Refer to MD if persistent</p>
Hypoglycemic in diabetics- may occur even 10-12 hours after exercise	<p>Check blood sugars pre and post exercise</p> <p>Have a patient eat a small amount 15-30 min prior to exercise</p> <p>Refer to MD for re-evaluation of insulin treatment (last resort)</p>
Nausea/vomiting	<p>Decrease intensity of exercise</p> <p>Increase cool down time</p> <p>Refer to MD if persistent-no exercise until resolved</p>

## Daily Exercise Participation

# Review of the Daily Exercise Participation

Deferral of Exercise on a Given Day in case of:

Angina

Acute illness with fever

Access site problems (infiltration, etc)

Blood pressure control problems (too high- 200/110 mmHg; too low-  $SBP \leq 100$ )

Unusual tachycardia

Dyspnea

Excessive fluid to be removed (if accompanied with dyspnea or need of supplemental oxygen)

High blood glucose levels in diabetic patients ( $> 300$  dL/g)

Severe emotional stress

Alcoholic hangover

Orthopedic pain

Foot sore/ulcer that will receive pressure during exercise

Decreased Intensity of Exercise on a given day as indicated in the following situations\*:

Dyspnea

Lightheadedness

Cramping

General fatigue

Arrhythmia

Blood pressure increases to  $\geq 200/110$  mmHg, or a decrease in  $SBP \leq 100$  mmHg

Prolonged fatigue (from previous exercise session)

Persistent tachycardia (during previous exercise session)

\*If problem persists, STOP exercise

Discontinuation of Exercise on a given day as indicated in the following situations:

Decrease in systolic blood pressure

Progressive fall in systolic blood pressure with symptoms

Excessive tachycardia

Failure of heart rate to increase

Angina

Inappropriate breathlessness that persists with a decrease in intensity

Faintness, dizziness, lightheadedness, confusion

Cyanosis, pallor

### **Exercise Unit "Champion"**

Each unit is encouraged to assign an exercise "champion" to be the communication point for Mandy. By no means is this person to be responsible for exercising all the patients. He/she will be the conduit between Mandy and the rest of the staff. Responsibilities of the exercise champion would be to encourage the staff to be more involved with the exercise program and coordinate new patients with Mandy.

### **Patient Exercise Programs**

Exercise programs will be set out throughout the year to encourage the patients to exercise. Popular programs for UVA have been the Where's Dan Exercise program where the patient follows a predetermined course on a map with a pin with their initials on it. The patient is awarded miles for every time they exercise and the more exercise a patient does, the more miles are awarded. Other successful programs are the 12 Days of Exercise during the Christmas holiday season as well as various staff-patient buddy up programs. The unit can present any program to their patients that would generate interest in the exercise program. Patients that complete these programs in the past have been awarded blankets, t-shirts, gift-certificates, and pillows.

### **SitFit Cup**

To encourage the staff to promote the exercise program for their perspective units, the SitFit cup is awarded to the most compliant unit each month. The unit with the highest compliance rates, as calculated by Mandy, will be awarded the cup to proudly display in their unit.

### **Pod/Bay Books**

Each Pod or Bay at every unit has a book that references all the material covered here. Other resources on the books include pertinent research articles, a stretching guide, a weight training guide, and various other materials.

### **Transplant/ Peritoneal Dialysis Patients**

Mandy also serves as an exercise consultant for PD and transplant patients when they come into clinic as needed.

### **Exercise as a Job Description**

The staff at UVA Dialysis will have the exercise program added to their job description and will be expected to encourage the patients to exercise as a standard practice in a patient's dialysis treatment.

### **Contact Information:**

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