

## The important benefits of exercise and pulmonary rehabilitation in PH

Portland, Ore. 2017 PHA on the Road



### Session description:

PH symptoms can make it difficult to maintain an active life. Over time, this can decrease participation in the activities that make life meaningful. Frustration, isolation, loneliness and fatigue are common feelings one can experience when this happens. Physical activity and exercise are important to be healthy and may seem uncomfortable or impossible for someone with PH, but it is possible to address the decline of activity tolerance and help someone feel more in control of their life. Your PH physician and pulmonary rehabilitation team can help with that. In a safe, positive way, they can give you direction to be active and help you step out in confidence.

### Exercise

*"If exercise/movement could be packed in a pill, it would be the single most widely prescribed and beneficial medicine in the nation."*

-National Institute of Health

### Overview:

It was assumed for many years that PH patients should avoid exercise because the added strain on the right ventricle could be harmful. The last few years, however, have provided evidence that exercise and exercise rehabilitation programs can benefit patients with PH. Compelling studies have demonstrated that contemporary cardiac and pulmonary rehabilitation can improve exercise performance and quality of life. Physical activity is essential to maintain muscle tone, physical and mental wellness, and – in some cases– to improve long-term survival. *A major goal of PH therapy is to improve the amount of activity that you can do before you become short of breath.* The ultimate goal is for safe exercise to have a positive impact on your health and quality of life.

This is not to say, however, that exercise in patients with PH is risk-free. It is important that certain precautions be observed to prevent over-exertion. The supervised setting of a formal pulmonary rehab program can help patients understand and adhere to these precautions. However, is important to note that the details regarding the optimal patient population, the timing of initiation and the specific regimen to be used are undefined. Still, cardiac and pulmonary rehabilitation appear to be effective resources to help patients optimize their physical abilities.

### Important Considerations:

#### **General Exercise Guidelines**

#### Beginning an Exercise Program

- Consult with your physician before starting an exercise regimen.
  - It is important to receive a physical assessment and medical clearance.
  - Conduct an exercise assessment using 6-minute walk test.
    - Determine exercise capacity and an exercise prescription.
    - Detect “exercise-induced hypoxemia” (low blood oxygen levels) and determine whether oxygen is needed.
    - Test home oxygen system with activity.

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- Perform functional performance assessment (i.e. strength, range of motion, posture, balance, pain, gait, breathing, etc.) and evaluate for any other exercise limitations.
- Consider a low dose exercise program, don't overexert yourself and know your limits.

### **Exercise Safety:**

- Know yourself and choose exercises that make sense for you.
- Follow your oxygen requirements.
- Never exercise alone! Start an exercise program in a supervised setting.
- Always have back-up medications and pumps as prescribed.
- Learn proper use of equipment – including safety with lines/pumps.
- There are two major causes of shortness of breath during exertion in PH patients:
  - The major cause is a decrease in the amount of blood pumped out by the heart because of the narrowing of arteries in the lung. This is present in all patients with PH.
  - Some patients also have a low level of oxygen in the blood.

### **Choosing Exercises:**

- Intensity:
  - Choose your exercise intensity based on your physician recommendations.
  - Know your baseline PH symptoms:
    - Shortness of breath, dizziness, chest tightness, chest pain, fatigue, palpitations, tachycardia, hypotension, hypoxemia, etc.
    - Should be symptom limited - know your limits!
  - Avoid activities that increase intra-thoracic pressure or Valsalva effort (the effort to breathe out forcibly while the mouth and nose are firmly closed).
- Duration and Frequency:
  - Listen to your body; exercise for as long as is comfortable and safe
  - Try to exercise at least 3-4x a week (again, listen to your body for signs of overexertion)
- Mode:
  - Walking – outside or on treadmill
  - Stationary cycling
  - Upper and lower extremity training as directed by PH physician
  - Aerobic exercise at low to moderate intensity
  - Aerobic interval training
  - Resistance training
  - Tai Chi and Yoga

In general, if you can walk couple of blocks, take a shower and get dressed without having to stop, then you are probably okay. Patients with marked shortness of breath or symptoms with minimal activity should discuss alternatives with their physician and PH care team.

**The rule of thumb is: Listen and know your body.**

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### Take-away Messages

Exercise is individualized; it is important to listen to your body while you are exercising and to know your limits. Recommendations for PH patients differ for each individual and may change over time. You will have good days and bad days – it is important to give yourself permission to stop when your body has had enough.

### Additional Resources:

- American Thoracic Society Patient Information Series “Pulmonary Rehabilitation”  
<https://www.thoracic.org/patients/patient-resources/resources/pulmonary-rehab.pdf>
- “What to Expect During Pulmonary Rehabilitation:” <http://www.nhlbi.nih.gov/health/health-topics/topics/pulreh/during.html>
- Zafzir, B. Exercise Training and Rehabilitation in Pulmonary Arterial Hypertension: Rationale and Current Data Evaluation. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 2013; 33(5): 263-73. <http://www.ncbi.nlm.nih.gov/pubmed/23962982>
- <http://www.phaclassroom.org/ResourceLibrary/content.cfm?ItemNumber=6096>