Appendix A – Teaching material

Breathing exercises and personal breathing pattern techniques

Breathing exercises:

Expected duration of exercises are approximately 30 minutes at medium intensity. The following breathing exercises are performed at group sessions and trained at home. The purpose is to experience shortness of breath in a controlled setting.

Exercise 1: Empty and stretch

1. Inhale.
2. Exhale slowly while the stomach is pulled in and the body bends forward.
3. When the lungs are empty, hold the mouth and nose with one hand, so no air can get in.
4. Keep the lungs empty while the body is raised again and the upper body and lungs are stretched.
5. Breath normally again until you are ready to repeat the exercise

Practice this 5 times a day.

Exercise 2: Fill and stretch

1. Inhale.
2. Exhale slowly while the stomach is pulled in and the body bends forward.
3. When the lungs are empty, a long inhalation begins with resistance from the lips.
4. First, fill the lungs at the bottom so that the stomach swells, then the chest and lastly, throat and mouth.

5. When the lungs are completely full, the air is kept in while the upper body and the lungs are stretched doing side bends.
6. Keep the air in for a few seconds before breathing out slowly.

Practice this 5 times a day.

Exercise 3: Slow-fast breathing

1. Inhale such that the diaphragm draws the air into the lower part of the lungs and the stomach swells.
2. Exhale such that the diaphragm pushes the air out of the lungs.
3. Use the diaphragm to push the air quickly in and out of the lungs, using only the diaphragm.

   Shoulders and chest should not move.
4. Switch between slow and fast breathing this way.

Practice this for 3 minutes each day.

Personal breathing pattern

The personal breathing pattern is used to control the relationship between activity and breathing. In this case, the activity is walking. The technique is to tie the number of breaths to the number of steps taken. Patients should learn to breathe in a rhythm adapted to the steps they take, in order to manage the technique in an easier way. Walking on a flat surface, the typical patient will need to take 1 inhalation per 3 steps and 1 exhalation per 3 steps. Walking uphill or carrying a bag of goods will require a larger respiratory effort and climbing stairs even more. To keep track of this dynamic respiratory pattern, a personal scheme is made for each patient. See examples below:

Example 1:

Person A	**Flat**	**Hill**	**Stairs**
Steps per exhale	3	2	1

Person A	Flat	Hill	Stairs
Steps per inhale	3	2	1

Example 2:

Person B	Flat	Hill	Steep hill	Stairs	Stairs with luggage
Steps per exhale	3	2	1	1	0,5
Steps per inhale	3	3	2	1	0,5

In the case of breathing rhythm 0.5, the patient both inhales and exhales for each step taken. There are also asymmetric rhythms in this scheme, when more steps are taken to exhale than inhale.

Once the rhythms of the individual patient are found, the patient have to remember this and initiate this conscious breathing pattern prior to activity. Train the personal breathing pattern for 10 minutes a day.