HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Respiratory Care Services		
Document:	Multidisciplinary Policy and Procedure		
Title:	Coughing and Breathing Exercises		
Applies To:	Respiratory Therapy Staff, Physician and Nurse		
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1. PURPOSE:

1.1 To standardize the re — training of patients to use respiratory muscles efficiently to mimic the attributes of an effective cough when their incapability is due to disease or trauma.

2. DEFINITONS:

2.1 Coughing and Breathing Exercises — are movements used to improve pulmonary gas exchange or to maintain respiratory function, especially after prolonged inactivity or general anaesthesia. Incisional pain after surgery in the chest or abdomen often inhibits normal respiratory movements.

3. POLICY:

3.1 A licensed Respiratory Care Practitioner will instruct the patient in exercises to prevent or lessen the pulmonary complications due to inefficient use of the respiratory muscles due to disease, trauma, surgery, drugs, or rib cage restrictive condition (including obesity and pregnancy)

3.2 A licensed Respiratory Care Practitioner trained in the procedure will instruct the patient, the family, and/or available medical personnel in the proper exercises as specified in physician's orders. The patient will receive supervised instruction as needed by the RCP until able to perform exercises adequately without supervision or until the circumstances necessitating breathing exercises have been eliminated

3.3 Before embarking on Ihe physical examination, review the mother's medical and pregnancy history to help focus the examination and to ensure that no pertinent findings are over — looked.

3.4 Assess newborn for any potential problems related to maternal pregnancy history or familial disorders.

3.5 A written physician's order is required. Order must specify which exercises are desired.

3.6 Nursing staff will perform cough and deep breathe unless physician's order specifies therapy to be performed by Respiratory Care Practitioner.

3.7 Goals:

- 3.7.1 To strengthen the abdominal and respiratory muscles and respiratory muscles.
- 3.7.2 To decrease the use of the accessory muscles of respiration.
- 3.7.3 To increase the efficiency of breathing.
- 3.7.4 To increase thoracic cage mobility and tidal volume.
- 3.7.5 To assist in removal of secretions.
- 3.7.6 To increase chest wall compliance.
- 3.7.7 To increase exercise tolerance.

3.8 Indications:

- 3.8.1 Breathing exercises are indicated in any pathological state, which causes the patient to use his muscles of respiration inefficiently resulting in an impairment of pulmonary function.
- 3.8.2 Generally, any patient with an abnormal pattern of breathing or increased work of breathing. They are done in conjunction with cough effort to assure total lung clearing.

3.9 Contraindications:

- 3.9.1 In acute medical or surgical emergencies.
- 3.9.2 A patient whose level of consciousness does not allow his full cooperation.

3.9.3 Significant pain of discomfort: although most not an absolute contraindication to therapy, pain or discomfort should be considered by the therapist and all possible steps taken to relieve it if it interferes with the patient's cooperation.

4. PROCEDURE:

4.1 For unilateral and bilateral, segmental, or lateral intercostal breathing; posterior basal expansion, apical expansion; diaphragmatic breathing, and pursed — lip breathing.

- 4.1.1 Check physician's orders.
- 4.1.2 Wash hands.
- 4.1.3 Explain purpose/goals of breathing exercises to the patient.
- 4.1.4 Position patient for most eficient breathing pattern.
- 4.1.5 Auscultate patient's chest.
- 4.1.6 Instruct patient on specific breathing exercise
- 4.1.7 Have patient repeat exercise until he/she is performing it adequately without supervision.
- 4.1.8 Have patient cough. Auscultate chest.
- 4.1.9 Therapist may demonstrate by exaggerated pantomime.
- 4.1.10 Document outcome/effectiveness of breathing exercises.

4.2 Pursed — Lip Breathing — helps to maintain higher expiratory pressure in the airways. Prevents alveolar collapse and extends alveolar collapse time onset.

- 4.2.1 Instruct patient to pucker his/her lips in a whistling position.
- 4.2.2 Ask patient to exhale slowly and completely.
- 4.2.3 Have patient repeat exercise.
- 4.2.4 May be used in conjunction with diaphragmatic breathing.

4.3 Diaphragmatic Breathing — Used to help strengthen and train the diaphragm and other respiratory abdominal muscles. To increase tidal volume.

- 4.3.1 Position the patient in a 45° degree relaxed sitting position with the back and head supported
- 4.3.2 The therapist places hand on the patient's upper abdomen.
- 4.3.4 Have the patient inhale through nose, letting the therapist's hand rise during inspiration.
- 4.3.4 Then have the patient exhale through pursed lips, while the therapist's hand rise during inspiration.
- 4.3.5 Have the patient perform this exercise with patient's hand on upper abdomen.
- 4.3.6 Have patient repeat exercise until adequate expansion is achieved.
- 4.3.7 The patient should relax upper chest and shoulders.

4.4 Lateral Costal Excursion — mobilize the thoracic cage. Help relieve splitting from incision or abdominal pain.

- 4.4.1 Have the patient sit erect on the edge of the bed or chair.
- 4.4.2 The therapist should place hands over the patient's lower ribs or upper abdomen.
- 4.4.3 Instruct the patient to exhale, while the therapist applies firm pressure against the patient's ribs and abdomen with hands. Have the patient exhale through pursed lips.
- 4.4.4 Have the patient inhale, pushing the lower ribs outward against the therapist's hands. The therapist should gradually increase the resistance to this movement, as much as can be tolerated by the patient.
- 4.4.5 Have the patient perform this exercise using own hands.

4.5 Undesirable Side Effects:

- 4.5.1 Patient who is unable to perform exercise easily may increase the work of breathing, indicated by use of accessory muscles.

4.6 Assessment of outcome:

- 4.6.1 Breathing exercises shall be considered effective when the patient's pulmonary function improves as measured by one or more of the following means:
  - 4.6.1.1 The patient's complaint of shortness of breath has resolved or significantly improves.
  - 4.6.1.2 Significant improvement in ABGs.
  - 4.6.1.3 Significant improvement in X — rays.

4.6.1.4 Significant improvement in tidal volume or forces vital capacity.
4.6.1.5 Equal bilateral chest excursion where unequal excursion existed prior to the institution of therapy.
4.6.1.6 Decreased work of breathing, decreased respiratory rate.
4.6.1.7 Effective voluntary or reflex cough mechanic.

4.7 Note:

4.7.1 If the patient is following all instructions with consistent effective attempts and lung, muscle, or rib cage lail in expected motion, one must re-evaluate and discuss with a physician. Perhaps there is another underlying problem (e.g. pleural effusion, pneumothorax, and hematoma) that must be relieved by other means.

4.7.2 If the patient's vital signs change significantly during these procedures, the treatment must be stopped, and an RN/MD should be notified.

4.8 Patient Teaching

4.8.1 The tactile sense is most helpful in instructing a patient to assume a more appropriate breathing pattern. The therapist's hands are placed over the areas where muscular movement is desired, and the patient is encouraged to concentrate on expanding the part of the chest under the hands.

4.8.2 For segmental breathing instruction, the therapist's hand is placed on the chest area to be expanded. The patient is encouraged to breathe deeply and to preferentially "send air" to that area of the chest where tactile stimulation is being applied by the therapist. On full expiration, moderate compression is applied.

4.8.3 It is often helpful to have a patient with obstructive disease exhale through "pursed lips", a maneuver that increases resistance to exhalation at the mouth. This maneuver is believed to transmit an early expiratory backpressure to the bronchial tree and the backpressure is believed to prevent early collapse of small bronchioles and improve exhalation from alveoli (specifically COPD patients)

4.8.4 The patient is encouraged to perform pursed lips breathing while climbing stairs, bathing, getting dressed and lifting

5. MATERIALS AND EQUIPMENT:

5.1 Splint (towel or pillows)

6. RESPONSIBILITIES:

6.1 Nurses
6.2 Physician
6.3 Respiratory Therapist

7. APPENDICES:

N/A

8. REFERENCES:

8.1 AARC Clinical Practice and Guidelines; Directed cough. Respiratory care.1993; 38:495-499.
8.2 Peruzzi WT, Smith B. Bronchial hygiene therapy. Critical Care Clinics. 1995; 11:79-96.
8.3 Hasani A, Pavia D, Agnew JE, Clarke SW. Regional lung clearance during cough and lorced expiration technique (FET): effects of flow and viscoelasticity. Thorax.1994; 49:557-61.

9. APPROVALS:

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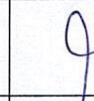
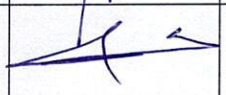
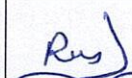
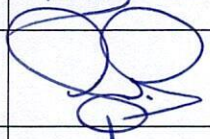
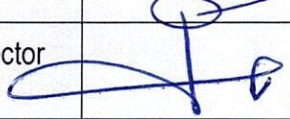
Prepared by:	Ms. Mary Joice Pena	Respiratory Therapist		January 08, 2025
Reviewed by:	Mr. Hassan Aldahkil	Head of Respiratory Therapy Department		January 12, 2025
Reviewed by:	Mr. Sabah Turayhib Al - Harbi	Director of Nursing		January 13, 2025
Reviewed by:	Mr. Abdulelah Ayed Al Mutairi	QM&PS Director		January 14, 2025
Reviewed by:	Dr. Tamer Mohamed Naguib	Medical Director		January 15, 2025
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