



وزارة الصحة
سياسات واجراءات

اسم السياسة: Chest Physical Therapy POLRSP	رمز السياسة:
عدد الصفحات: 8 صفحات	الطبعة: الأولى
MOH POL HOS RT 02	

الوحدة التنظيمية: مديرية التطوير المؤسسي وضبط الجودة	
الجهة المعنية بتنفيذ السياسة: شعبة المعالجة التنفسية	
الاعداد:	التوقيع:
لجنة تطوير واستحداث وحدات المعالجة التنفسية في مستشفيات وزارة الصحة	التوقيع:
المراجعة: قسم إدارة الجودة/شعبة سلامة المرضى	التوقيع:
التدقيق من ناحية ضبط الجودة: مدير مديرية التطوير المؤسسي وضبط الجودة	التوقيع:
الاعتماد: عطفة الأمين العام للشؤون الإدارية والفنية	التوقيع:
تاريخ المراجعة: ١٠/١١/٢٧	تاريخ تدقيق ضبط الجودة: ١٠/١١/٢٧
تاريخ الاعتماد: ١٠/١١/٢٧	تاريخ الاعتماد: ١٠/١١/٢٧

وزارة الصحة
مديرية التطوير المؤسسي وضبط الجودة
السياسات والاعتمادات
Policies & Procedures

ختم الاعتماد
١٠/١١/٢٧

تتم مراجعة السياسة كل سنتين على الأقل من تاريخ اعتماد آخر طبعة :	رقم الطبعة
تاريخ الاعتماد	مبررات مراجعة السياسة

ختم النسخة الاصلية

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1- Policy:

1. Chest physiotherapy should be ordered by the physician; frequency of the treatment should be documented.
2. To change or D/C chest physiotherapy (CPT) order, physician should be consulted, order should be documented or signed by the physician.
3. The physician upon writing chest physiotherapy orders should consider respiratory therapy notes and recommendations.
4. Chest physiotherapy should not be ordered for the purpose of suction.
5. Chest physiotherapy should not be ordered for purpose of tracheostomy care.
6. Chest physiotherapy should not be ordered for drowsy, comatose or non-responsive patients.
7. Chest physiotherapy frequency should not exceed "Q 4 hours" for floor patients.
8. Incentive spirometer is recommended for routine, prophylactic use in postoperative patients.
9. CPT is not recommended if the patient is able to mobilize secretions with cough, but
10. Instruction in effective cough technique may be useful.
11. Early mobility and ambulation is recommended to reduce postoperative complications and promote airway clearance.
12. Routine administration of bronchodilators and mucolytic to postoperative patients is not recommended.
13. Lung expansion maneuvers such as coughing, incentive spirometer, and voluntary deep Breaths are best taught prior to surgery.
14. Adequate postoperative pain control may help to minimize postoperative pulmonary
15. Complications by enabling earlier ambulation and improving the patient's ability to take deep breaths.

2- Purpose:

1. To help patients breathe more freely and to get more oxygen into the body.
2. To facilitate removal of retained or profuse airway secretions.
3. To optimize lung compliance and prevent it from collapsing, to decrease the work of Breathing.

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3- Scope:

This policy is applicable to respiratory therapy unit.

4- Responsibilities:

It is the responsibility of respiratory therapist to perform the CPT procedure.

5- Definitions

1. Lung expansion therapy encompasses a variety of respiratory care procedure designed to prevent or correct atelectasis.
2. Airway Clearness Therapy describes methods designed to ensure the patency of the patient's airway, refers to a variety of different strategies used to eliminate excess secretions.
3. Chest physical therapy (CPT) described the primary techniques used to assist with clearing secretions from the airways as Postural Drainage and Percussion.
4. Lung Expansion Therapy
 - 4.1 Incentive spirometry (IS).
 - 4.2 Noninvasive ventilation.
 - 4.3 Intermittent positive airway pressure breathing (IPPB).
 - 4.4 Continuous positive airway pressure (CPAP).
 - 4.5 Breathing exercises (deep breathing, pursed lip breathing and segmental breathing exercise).
 - 4.6 Early patient mobilization and physical activity.
 - 4.7 High-flow nasal cannula (HFNC).
 - 4.8 Positive airway Pressure (PAP) adjuncts (EZPAP).
5. Airway Clearness Therapy
 - 5.1 Cough training and cough stimulation techniques.
 - 5.2 Positive expiratory pressure (PEP) and vibrating PEP (Acapella).
 - 5.3 High-frequency compression/oscillation methods.
 - 5.4 Chest physiotherapy (CPT)
 - 5.4.1 Percussion.
 - 5.4.2 Postural drainage.

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5.4.3 Vibration.

6- Procedure:

6.1 Candidates: Any patient with the following conditions:

- 6.1.1 Accumulation of secretion in the tracheobronchial tree.
- 6.1.2 In ability to cough effectively.
- 6.1.3 Impaired mucociliary transport.
- 6.1.4 Mismatching between ventilation and perfusion.
- 6.1.5 Atelectasis.
- 6.1.6 Impaired gas exchange.
- 6.1.7 Any surgery might affect the normal respiratory mechanism and breathing pattern i.e. thoracic and abdominal operations.
- 6.1.8 Adventitious breath sounds suggestive of secretions in the airways, which persist after coughing and suctioning.

6.2 Contraindication:

- 6.2.1 Chest physical therapy should not be performed on patients with:
 - 6.2.1.1 Bleeding from the lungs.
 - 6.2.1.2 Head and neck injury until stabilized.
 - 6.2.1.3 Recent spinal surgery or acute spinal injury.
 - 6.2.1.4 Fractured ribs and damaged chest walls. with or without flail chest
 - 6.2.1.5 Acute asthma.
 - 6.2.1.6 Recent heart attack.
 - 6.2.1.7 Pulmonary embolism.
 - 6.2.1.8 Airway active hemorrhage and hemoptysis.
 - 6.2.1.9 Broncho pleural fistula.
 - 6.2.1.10 Empyema and lung abscess. Tension pneumothorax/untreated pneumothorax.
 - 6.2.1.11 Pulmonary edema associated with congestive heart failure.
 - 6.2.1.12 ICP >15 mm Hg
 - 6.2.1.13 Large pleural effusion.
 - 6.2.1.14 Unstable cardiovascular disorders (uncontrolled hypertension (diastolic > 110), Hemodynamic unstable).

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6.3 Contraindication to External manipulation of the thorax in addition to contraindication Previously listed:

6.3.1 Osteoporosis and osteomyelitis of the ribs.

6.3.2 Coagulopathy.

6.3.3 Platelets <50 and /or INR ≥ 3 .

6.3.4 Subcutaneous emphysema.

6.3.5 Tuberculosis.

6.3.6 Recent surgery, open wounds, or burns on the site of the procedure or healing tissue.

6.3.7 Lung contusion.

6.4 Contraindication for postural drainage in addition to contraindication previously listed:

6.4.1 Esophageal surgery.

6.4.2 Abdominal distension.

6.4.3 Aged, confused, or anxious patients who do not tolerate position changes.

6.5 Contraindication for Positive Airway Pressure in addition to contraindication previously listed:

6.5.1 Patients unable to tolerate the increased work of breathing (acute asthma, COPD).

6.5.2 Recent facial, oral, or skull surgery or trauma.

6.5.3 Acute sinusitis.

6.5.4 Epistaxis.

6.5.5 Esophageal surgery.

6.5.6 Active hemoptysis.

6.5.7 Nausea.

6.5.8 Known or suspected tympanic membrane rupture or other middle ear pathology.

6.5.9 Tracheoesophageal fistula

6.5.10 Radiographic evidence of blebs

6.6. Recommendations:

6.6.1 Any patient undergoes major surgery should start incentive Spirometer (refer to policy No. POLRSP-13) and deep breathing exercise at least 24 hours before operation and to be continued after operation according to the patient condition.

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6.6.2 Pursed lip breathing exercise should be prescribed for COPD patients rather than Incentive Spirometer.

6.6.3 In abdominal and thoracic surgeries:

6.6.3.1 **High risk patients:** start prophylactic CPT (once) and Incentive Spiro meter 24 hour prior to the operation day. Continue Chest physiotherapy and incentive Spiro meter post operation four times a day for two days then twice daily to be discontinued at the fifth day then continue incentive Spirometer unless patient has pulmonary complications.

6.6.3.2 **Low risk patients:** start prophylactic Incentive Spirometer 24 hour prior to the operation day. Continue Chest physiotherapy post operation three times a day for first day then twice daily for two days to be discontinued at the fourth day unless patient has pulmonary complications. Continue incentive Spiro meter.

6.6.4 for orthopedic and lower limb surgeries:

6.6.4.1 **High-risk patients:** start prophylactic CPT (once daily) and Incentive Spiro meter 24 hour prior to the operation day. Continue Chest physiotherapy and incentive Spirometer post operation twice daily for two days to be discontinued at the third day then continue incentive Spiro meter unless patient has pulmonary complications.

6.6.4.2 **Low risk patients:** start prophylactic Incentive Spiro meter 24 hour prior to the operation day. Continue incentive Spiro meter post operation only unless patient has pulmonary complications.

6.6.5 Patient undergoes minimal abdominal surgery e.g. laparoscopic upper gastro intestinal Surgery should start incentive Spiro meter pre and post operation only unless pulmonary complications presented.

6.6.6 If clinically significant pulmonary complications presented, patient must be reevaluated In addition, frequency of chest physiotherapy should be adjusted according to the patient needs.

7. Forms and Document:

None.

8. References:

1. Dronkers J, Veldman A, Hoberg E, van der Waal C, van Meeteren N. Prevention of pulmonary complications after upper abdominal surgery by preoperative intensive

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2. Inspiratory muscle training: a randomized controlled pilot study. Clin Rehabil. 2008
3. Fagevik Olsén M, Hahn I, Nordgren S, Lönroth H, Lundholm K. Randomized controlled trial of prophylactic chest physiotherapy in major abdominal surgery. Br J Surg. 1997
4. Nov;84(11):1535-8. PMID: 9393272 [PubMed - indexed for MEDLINE].
5. Gigliotti F, Romagnoli I, Scano G. Breathing retraining and exercise conditioning in patients with chronic obstructive pulmonary disease (COPD): a physiological approach. Respir Med.
6. Hulzebos EH, Helder PJ, Favié NJ, De Bie RA, Brutel de la Riviere A, Van Meeteren NL.
7. Preoperative intensive inspiratory muscle training to prevent postoperative pulmonary complications in high-risk patients undergoing CABG surgery: a randomized clinical trial.
8. JAMA. 2006 Oct 18;296(15):1851-7. PMID: 17047215 [PubMed - indexed for Olbers T, Lönroth H, Fagevik-Olsén M, Lundell L. Laparoscopic gastric bypass:
9. development of technique, respiratory function, and long-term outcome.
10. Obes Surg. 2003 Jun;13(3):364-70. PMID: 12841895 [PubMed - indexed for MEDLINE].
11. Varela G, Ballesteros E, Jiménez MF, Novoa N, Aranda JL. Cost-effectiveness analysis of prophylactic respiratory physiotherapy in pulmonary lobectomy. Eur J Cardiothorac Surg.
12. 2006 Feb;29(2):216-20. Epub 2006 Jan 11. PMID: 16376560 [PubMed - indexed for MEDLINE].
13. www.touchbriefings.com/pdf/952/braverman_edit%5B1%5D.pdf.
14. Ferguson, MK (1999) Preoperative assessment of pulmonary risk. Chest 115,58S-63S.
- Bendixen, HH, Smith, GM, Mead, J (1964) the pattern of ventilation in young adults. J Appl Physiol 19,195-198.
15. Zikria, BA, Spencer, JL, Kinney, JM, et al (1974) Alterations in ventilatory function and breathing patterns following surgical trauma. Ann Surg 179,1-7.
16. Van de Water, JM, Watring, WG, Linton, LA, et al (1972) Prevention of postoperative pulmonary complications. Surg Gynecol Obstet 135,1-5.
17. EGAN'S, Fundamental of Respiratory Care, TWELVE Edition.
18. Shawna L, Bruce K, Gail S, Carl F, Cathreine A, Teresa A, Richrad D, Dean R, AARC, Clinical Practice Guideline : effectiveness of Nonpharmacologic Airway Clearance

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19. Therapies in Hospitalized Patients, Respiratory Care December Vol. 58 No.12.
20. AARC Clinical Practice Guideline: Effectiveness of Non-pharmacologic Airway Clearance Therapies in Hospitalized Patients.
21. AARC Clinical Practice Guideline Use of Positive Airway Pressure Adjuncts to Bronchial Hygiene Therapy AARC Clinical Practice Guideline: Effectiveness of Pharmacologic Airway Clearance Therapies in Hospitalized Patients Shawna L Strickland PhD RRT-NPS ACCS AE-C FAARC, Bruce K Rubin MD MEngr MBA FAARC, Carl F Haas MLS RRT-ACCS
22. FAARC, Teresa A Volsko MHHS RRT FAARC, Gail S Drescher MA RRT, and Catherine A O'Malley RRT-NPSEvaluation of the effectiveness of manual chest physiotherapy techniques on quality of life at six months post exacerbation of COPD (MATREX): a randomised controlled equivalence trial Jane L Cross^{1,2*}, Frances Elender¹ , Gary Barton¹ , Allan Clark¹ , Lee Shepstone¹ , Annie Blyth¹ , Max O Bachmann¹ and Ian Harvey¹ Cross et al. BMC Pulmonary Medicine 2012, 12:33.
23. Airway Clearance Techniques: The Right Choice for the Right Patient February 2021 | Volume 8 | Article 544826
24. King Hussein cancer center polices, Noninvasive Positive Pressure Ventilation (NPPV),2021.

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