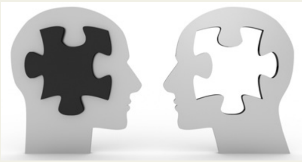
Interprétation et utilisation des résultats scientifiques



Gregory Reychler

Service de Pneumologie
Cliniques universitaires Saint-Luc
Bruxelles

http://www.recherche-clinique-sherbrooke.com

Conflit d'intérêt

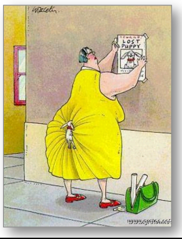
- Kinésithérapeute hospitalier

Comment poser la bonne question?

A partir d'une situation clinique
- Transformer la situation clinique en une question précise

Sur base d'une revue <u>exhaustive</u> de ce qui est connu

- Choisir les critères d'inclusion
- Choisir les bases de données ou les méthodes et les outils d'évaluation (pour un protocole de recherche)



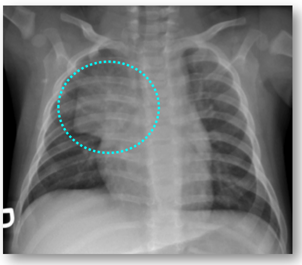
Comment poser la bonne question?

Pré-requis

Potts M, *BMJ* 2006;333:701–3

Comment poser la bonne question?

Pré-requis



« …We see only what we look for and we recognize only what we know… »

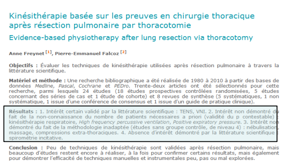
Dr M. Sosman, 1957

Comment poser la bonne question?

Illustration

CLINIQUE

- Point de départ
  - Patient avec résection pulmonaire
- Questions
  - Implications de la chirurgie
  - Modifications physiologiques
  - Quel est le traitement préconisé?



Kinésithérapie basée sur les preuves en chirurgie thoracique après résection pulmonaire par thoracotomie

Evidence-based physiotherapy after lung resection via thoracotomy

Anne Freynet [1], Pierre-Emmanuel Falcoz [2]

Objectifs : Évaluer les techniques de kinésithérapie utilisées après résection pulmonaire à travers la littérature scientifique.

Matériel et méthode : Une recherche bibliographique a été réalisée de 1980 à 2010 à partir des bases de données *Medline*, *Pascal*, *Cochrane* et *PEDro*. Trente-deux articles ont été sélectionnés pour cette recherche, parmi lesquels 24 études (18 études prospectives contrôlées randomisées, 5 études concernant des séries de cas et 1 étude de cohorte) et 8 revues de synthèse (5 systématiques, 1 non systématique, 1 issue d'une conférence de consensus et 1 issue d'un guide de pratique clinique).

Résultats : 1. Intérêt certain validé par la littérature scientifique : TENS, VNI. 2. Intérêt non démontré du fait de la non-connaissance du nombre de patients nécessaires a priori (validité du p contestable) : kinésithérapie respiratoire, *High frequency percussive ventilation*, *Positive expiratory pressure*. 3. Intérêt non démontré du fait de la méthodologie inadaptée (études sans groupe contrôle, de niveau 4) : nébulisation, massage, compressions extra-thoraciques. 4. Absence d'intérêt démontré par la littérature scientifique : spirométrie incitative.

Conclusion : Peu de techniques de kinésithérapie sont validées après résection pulmonaire, mais beaucoup d'études restent encore à réaliser, à la fois pour confirmer certains résultats, mais également pour démontrer l'efficacité de techniques manuelles et instrumentales peu, pas ou mal explorées.

Kinésithérapie, la revue 2011.11(111):pp. 34-44

Structure conventionnelle

de Abreu et al. International Archives of Medicine 2011, 4:37
http://www.intarchmed.com/content/4/1/37

INTERNATIONAL ARCHIVES OF MEDICINE

ORIGINAL RESEARCH Open Access

Chest associated to motor physiotherapy improves cardiovascular variables in newborns with respiratory distress syndrome

Luiz Carlos de Abreu[1,3*], Vitor E Valenti[2,3], Adriana G de Oliveira[1], Claudio Leone[1], Arnaldo AF Siqueira[1], Dafne Herreiro[1], Rubens Wajnsztejn[3], Katia V Manhabusque[3], Hugo Macedo Júnior[3], Carlos B de Mello Monteiro[4], Laís L Fernandes[3] and Paulo HN Saldiva[2]

Abstract

Background: We aimed to evaluate the effects of chest and motor physiotherapy treatment on hemodynamic variables in preterm newborns with respiratory distress syndrome.

Methods: We evaluated heart rate (HR), respiratory rate (RR), systolic (SAP), mean (MAP) and diastolic arterial pressure (DAP), temperature and oxygen saturation (SO_2%) in 44 newborns with respiratory distress syndrome. We compared all variables between before physiotherapy treatment vs. after the last physiotherapy treatment. Newborns were treated during 11 days. Variables were measured 2 minutes before and 5 minutes after each physiotherapy treatment. We applied paired Student t test to compare variables between the two periods.

Results: HR (148.5 ± 8.5 bpm vs. 137.1 ± 6.8 bpm - p < 0.001), SAP (72.3 ± 11.3 mmHg vs. 63.6 ± 6.7 mmHg - p = 0.001) and MAP (57.5 ± 12 mmHg vs. 47.7 ± 5.8 mmHg - p = 0.001) were significantly reduced after 11 days of physiotherapy treatment compared to before the first session. There were no significant changes regarding RR, temperature, DAP and SO_2%.

Conclusions: Chest and motor physiotherapy improved cardiovascular parameters in respiratory distress syndrome newborns.

Background

The respiratory distress syndrome (RDS) was reported in approximately 0.5% to 1% of newborns. The incidence and severity are directly related to prematurity degree. It affects around 50% of preterm newborns lighter than 1500 g and deaths associated to the disease; it usually occurs during acute phase of respiratory failure and is largely limited to extremely immature newborns, which birth weight is lower than 1000 g [1,2].

Neonatal physiotherapy is a procedure performed between clamping of umbilical cord and 28 days after delivery, which include newborn lung and motor handling [3]. Lung management aims to remove the excess of bronchial secretions. The adverse effect arising from excess secretions and the fact that their removal may significantly improve the specific conductance of the airways has been demonstrated in previous studies [4,5].

Physiotherapy procedures provides stability of hemodynamic variables, such as heart rate (HR) [6-9], the functional maintenance of newborn cerebral circulation and maintenance of airways with turbulent flow and minimal secretion, which allow a increased permeability and reduced number of intrinsic airway that contribute to increased airway resistance and decrease in gas changes physiological events [3].

There is controversy related to respiratory or chest physiotherapy in the neonatal period. Previous studies showed a reduction in hemodynamic variability of preterm infants and highlighted the beneficial therapeutic effects of interventional procedures of physiotherapy [3]. However, previous investigations reported deleterious effects, suggesting that the handling procedures of interventional therapy in

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Chest associated to motor physiotherapy improves cardiovascular variables

Luiz Carlos de Abreu[1,3*], Vitor E Valenti[2,3], Adriana G de Oliveira[1], Claudio Leone[1], Arnaldo AF Siqueira[1], Dafne Herreiro[1], Rubens Wajnsztejn[3], Katia V Manhabusque[3], Hugo Macedo Júnior[3], Carlos B de Mello Monteiro[4], Laís L Fernandes[3] and Paulo HN Saldiva[2]

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Conclusions: Chest and motor physiotherapy improved cardiovascular parameters in respiratory distress syndrome newborns.

Pertinence du titre

Lecture rapide (Conclusions – Méthode – Résultats)

CONSORT 2010 checklist of information to include when reporting a randomised trial*

Section/Topic	Item No	Checklist item	Reported on page No
Title and abstract			
	1a	Identification as a randomised trial in the title	______
	1b	Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	______
Introduction			
Background and objectives	2a	Scientific background and explanation of rationale	______
	2b	Specific objectives or hypotheses	______
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	______
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	______
Participants	4a	Eligibility criteria for participants	______
	4b	Settings and locations where the data were collected	______
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	______
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	______
	6b	Any changes to trial outcomes after the trial commenced, with reasons	______
Sample size	7a	How sample size was determined	______
	7b	When applicable, explanation of any interim analyses and stopping guidelines	______
Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	______
	8b	Type of randomisation; details of any restriction (such as blocking and block size)	______
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	______
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	______
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	______
	11b	If relevant, description of the similarity of interventions	______
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	______
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	______
Results			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome	______
	13b	For each group, losses and exclusions after randomisation, together with reasons	______
Recruitment	14a	Dates defining the periods of recruitment and follow-up	______
	14b	Why the trial ended or was stopped	______
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	______
Numbers analysed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	______
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	______
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	______
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	______
Harms	19	All important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	______
Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	______
Generalisability	21	Generalisability (external validity, applicability) of the trial findings	______
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	______
Other information			
Registration	23	Registration number and name of trial registry	______
Protocol	24	Where the full trial protocol can be accessed, if available	______
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	

*We strongly recommend reading this statement in conjunction with the CONSORT 2010 Explanation and Elaboration for important clarifications on all the items. If relevant, we also recommend reading CONSORT extensions for cluster randomised trials, non-inferiority and equivalence trials, non-pharmacological treatments, herbal interventions, and pragmatic trials. Additional extensions are forthcoming: for those and for up to date references relevant to this checklist, see www.consort-statement.org.

CONSORT 2010 checklist — Page 1 / Page 2

Moyenne ou médiane?

- Renseignent sur l'ordre de grandeur MAIS pas interchangeables !
  - Moyenne
    - Très sensible aux valeurs extrêmes (d'autant plus que ces valeurs sont extrêmes et que n est petit).
    - Valide que la distribution est normale (moyenne = médiane)
  - Médiane
    - Insensible aux valeurs extrêmes
    - Valable pour les distribution non normales

Table 1 Demographic and clinical characteristics of study subjects

	SSc-ILD (n = 83)	
Male	17 (20)	
Mean (SD) age (years)	49.5 (11.5)	
White, n (%)	66 (80)	
Smoking status, n (%)		
Current	9 (11)	
Former	32 (39)	
Never	42 (50)	
Pulmonary physiology		
Rest FVC (%)	70.9 (21.4)	73 (52–89)
Rest TLCO (%)	70.4 (23.7)	72 (41–89)
Surgical biopsy, n (%)	17 (20)	
UIP	6 (35)	
NSIP	4 (24)	
ESHL	4 (24)	
Other	3 (17)	
Exercise variables		
Oxygenation		
Baseline Spo_2	93.8 (2.6)	94 (93–96)
Baseline Sao_2	92.3 (2.5)	93 (91–94)
Baseline Pao_2	71.0 (9.9)	71 (64–78)
Max exercise Spo_2	91.4 (5.8)	93 (89–96)
Max exercise Sao_2	89.9 (6.0)	92 (87–94)
Max exercise Pao_2	70.2 (17.2)	69 (56–83)
Exercise capacity		
$\dot{V}o_2$max (l/min)	1.0 (0.4)	0.9 (0.7–1.3)
$\dot{V}o_2$max (%)	56.1 (17.2)	56 (44–65)
Work (Watts)	83.8 (34.2)	75 (60–100)
Work (%)	62.8 (19.2)	62 (38–72)

Data presented as n (%), mean (SD) or median (interquartile range).
FVC, percentage predicted forced vital capacity; ESHL, end stage honeycomb lung; NSIP, non-specific interstitial pneumonia; Pao_2, arterial oxygen tension; Spo_2, peripheral oxygen saturation; Sao_2, arterial blood saturation; SSc-ILD, fibrosing interstitial lung disease related to systemic sclerosis; TLCO, percentage predicted lung carbon monoxide transfer factor; UIP, usual interstitial pneumonia; $\dot{V}o_2$max, maximum oxygen uptake.

C'est quoi le petit « p »?

Table 1 Changes in six-minute walk, endurance shuttle walk and HRQL following 8 weeks pulmonary rehabilitation

	Baseline $n = 20$	8 weeks $n = 17$	Mean (SD)	P-value	Standardized mean change (SD)
Lung function					
FEV_1, L	0.95 (0.51)	0.85 (0.30)	−0.13 (0.48)	0.3	
Resting SpO_2, %	95 (2)	95 (3)	0.29 (1.99)	0.6	
Field exercise tests					
ESWT					
Distance, m	313 (193)	633 (526)	302 (387)	0.005	0.54 (0.69)
Time, min	5.1 (2.8)	9.6 (7.0)	4.5 (5.4)	0.004	0.59 (0.71)
Post Borg	4.7 (1.9)	3.9 (2.0)	−0.9 (2.5)	0.168	−0.32 (0.91)
6MWT					
Distance, m	351 (104)	420 (102)	47 (79)	0.038	0.32 (0.54)
Post Borg	4.8 (2.6)	3.9 (2.2)	−0.9 (2.3)	0.145	−0.28 (0.70)
HRQL					
CRQ					
Dyspnoea	17.7 (5.8)	19.6 (5.7)	2.1 (4.0)	0.056	0.26 (0.49)
Fatigue	13.5 (4.2)	15.3 (4.4)	1.8 (3.6)	0.065	0.30 (0.60)
Emotional function	30.0 (8.7)	34.4 (8.4)	4.2 (4.6)	0.002	0.43 (0.47)
Mastery	17.1 (4.4)	18.3 (4.7)	1.3 (3.6)	0.185	0.19 (0.56)
Total	78.3 (18.7)	88.2 (19.1)	9.9 (12.2)	0.005	0.31 (0.45)
HAD					
Anxiety	6.9 (3.5)	5.6 (3.8)	−1.2 (2.1)	0.024	−0.24 (0.39)
Depression	4.9 (3.2)	3.9 (3.0)	−1.1 (2.8)	0.138	−0.24 (0.64)

Ho = Pas de différence après 8 semaines de réhabilitation pulmonaire

Eaton T, Chronic Respiratory Disease 2006; 3: 3-9

Comment interpréter… une corrélation?

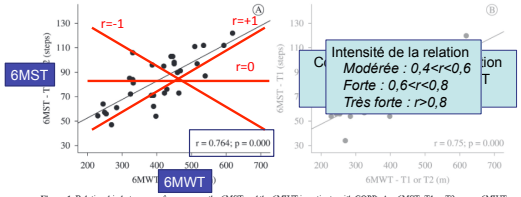
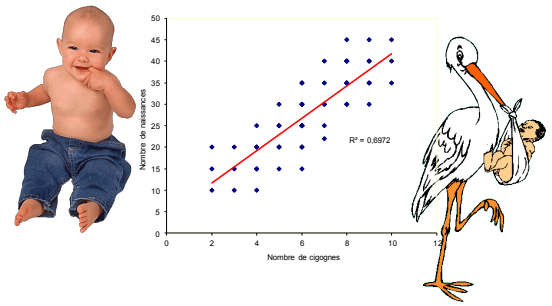


Figure 1. Relationship between performance on the 6MST and the 6MWT in patients with COPD. A = 6MST -T1 or T2 versus 6MWT -T1 or T2; B = 6MST -T1 versus 6MWT -T1 or T2. COPD = chronic obstructive pulmonary disease; 6MWT-T1 or T2 = Best performance on the first or second six-minute walk test; 6MST-T1= First six minute step test; 6MST-T1 or T2 = Best performance on the first or second six-minute step test.

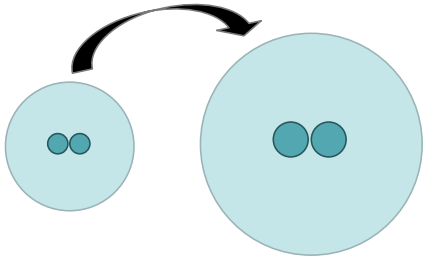
Pessoa BV. Braz J Phys Ther. 2014 May-June; 18(3):228-236.

Cigogne et naissances?



Neyman 1952

Qu'est-ce que la puissance d'une étude?



Puissance = pouvoir grossissant d'un microscope (doit être suffisant pour montrer que deux points très proches l'un de l'autre sont distincts)

Qu'est-ce que la validité d'un outil?

The six-minute walk test in healthy children: reliability and validity

A.M. Li*, J. Yin*, C.C.W. Yu*, T. Tsang*, H.K. So*, E. Wong#, D. Chan*, E.K.L. Hon* and R. Sung*

ABSTRACT: **The aim of this study was to assess the reliability and validity of the 6-min walk test (6MWT) in healthy children.**

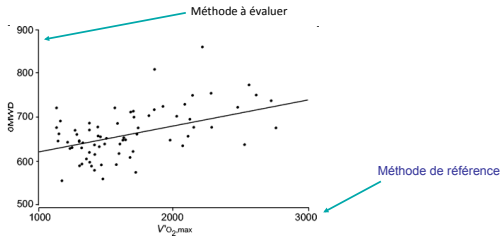
Chinese secondary school students were randomly recruited. They attended the current authors' unit on two occasions, separated by 2 weeks. Physical examination and standardised maximum incremental exercise testing on a treadmill were performed on the first visit. Spirometry and 6MWT were carried out on the second visit. A randomly selected subgroup was invited to return for repeat 6MWT at an interval of 2–4 weeks.

Seventy-eight subjects were recruited; however, four failed to achieve maximal effort on exercise test. The final group included 43 young females and the mean±SD age of the subjects was 14.2±1.2 yrs. Physical examination was unremarkable in all cases. The mean±SD per cent predicted forced expiratory volume in one second was 91.4±10.2%. Concurrent validity was demonstrated by good correlation between the 6-min walking distance and maximum oxygen uptake determined on the exercise treadmill. Test–retest reliability was undertaken in 52 subjects, and the intraclass correlation coefficient (95% confidence interval) was calculated as 0.94 (0.89–0.96). In addition, Bland and Altman plots demonstrated a high degree of repeatability.

In healthy children, the 6-min walk test is a reliable and valid functional test for assessing exercise tolerance and endurance.

Eur Respir J 2005; 25: 1057–1060
DOI: 10.1183/09031936.05.00134904

Validité : corrélation



Relationship between 6-min walk distance (6MWD) and maximum oxygen consumption ($V'O2,max$) ($r = 0.44$, $p<0.0001$)

Li, Eur Respir J 2005; 25:1057-1060

Qu'est-ce que la reproductibilité d'un outil?

The six-minute walk test in healthy children: reliability and validity

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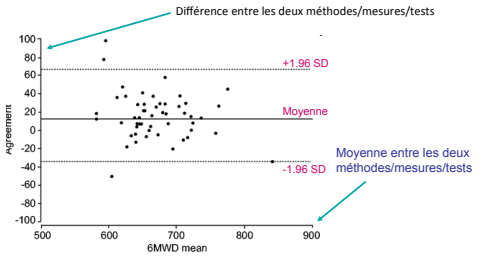
Eur Respir J 2005; 25: 1057–1060
DOI: 10.1183/09031936.05.00134904

Reproductibilité : Bland-Altman



Bland-Altman plot of agreement of 6-min walk distance (6MWD) between two tests. The bias (mean difference between the two paired means) was 15 m (-- ---) and the limit of agreement (-------) was between -35 and 65 m

Li, Eur Respir J 2005; 25:1057-1060

Comment construire un graphiques?

- Propriétés
  - Lisible sans le texte
  - Bien légendé
    - Paramètres et unités de mesures
    - Axes
    - Légende

Borghi-Silva, Respir Care 2010;55(7):885– 894

Votre avis

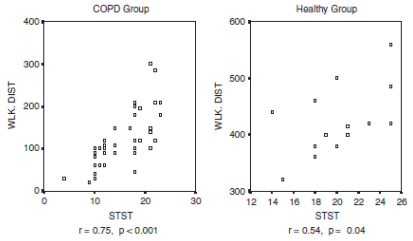


Figure 1 Relationship between the 6min walking distance and result of STST in healthy and COPD groups.

Comment déterminer le niveau d'un article?

- Cote sur 10 points
- Plus le score se rapproche de 10, plus grande est la qualité de l'article

Echelle PEDro

1.	eligibility criteria were specified	no ❑ yes ❑ where:
2.	subjects were randomly allocated to groups (in a crossover study, subjects were randomly allocated an order in which treatments were received)	no ❑ yes ❑ where:
3.	allocation was concealed	no ❑ yes ❑ where:
4.	the groups were similar at baseline regarding the most important prognostic indicators	no ❑ yes ❑ where:
5.	there was blinding of all subjects	no ❑ yes ❑ where:
6.	there was blinding of all therapists who administered the therapy	no ❑ yes ❑ where:
7.	there was blinding of all assessors who measured at least one key outcome	no ❑ yes ❑ where:
8.	measures of at least one key outcome were obtained from more than 85% of the subjects initially allocated to groups	no ❑ yes ❑ where:
9.	all subjects for whom outcome measures were available received the treatment or control condition as allocated or, where this was not the case, data for at least one key outcome was analysed by "intention to treat"	no ❑ yes ❑ where:
10.	the results of between-group statistical comparisons are reported for at least one key outcome	no ❑ yes ❑ where:
11.	the study provides both point measures and measures of variability for at least one key outcome	no ❑ yes ❑ where:

Comment déterminer le niveau d'une revue?

IMPACT FACTOR

nombre de citations /nombre d'articles publiés

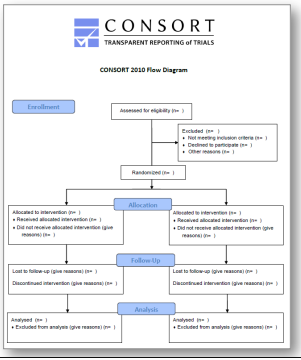
(sur une période de référence de deux ans)

Diverses influences

Nombre de parutions
Nombre d'articles par numéro
Fréquence des Review
Type de lectorat (spécialité)

http://www.citefactor.org/journal-impact-factor-list-2014.html

Qu'est-ce qu'un Consort Flow Chart?



Qu'est-ce qu'une systematic review?

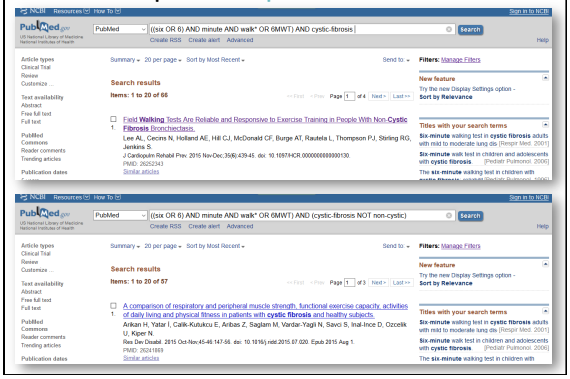
Table 2. Characteristics of study populations and interventions.

Study	Male/ female (n)	Mean age in years	Reasons for exclusion	FEV_1 % predicted	Intervention	Frequency	Duration
Cambach[15]	13/10	62	Heart complaints, locomotor disabilities	59	Primary care physiotherapist, giving both general and specific muscle training, education and recreation	3 times/week	12 weeks
Clark 1996[11]	-	57	-	61	Home training of large muscle groups at low intensity	7 times/week	12 weeks
Clark 2000[12]	25/18	49	Complaints, arthritis, daily oral steroids	77	Hospital-based general and specific muscle training	2 times/week	12 weeks
Grosbois[13]	47/11	62	Heart complaints, locomotor disabilities	49	Outpatient clinic together with home-based general and specific muscle training and education	7 times/week	18 months
Ringbaek[14]	7/38	63	Other pathology, domiciliary oxygen, psychiatric disorders	47	Hospital-based general and specific muscle training, education and muscle stretching	2 times/week	8 weeks

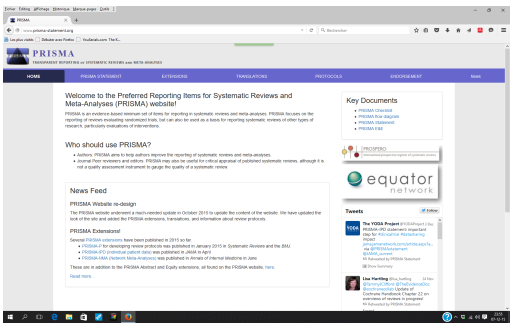
Qu'est-ce qu'une systematic review?

Outcomes	Results	Summary of Authors' Conclusions
Pao_2/Fio_2, $Paco_2$, Vt, dynamic respiratory compliance, airway pressure, MAP, HR, cardiac index, adverse events before, during, and 30- and 120-min post-Rx.	No significant change in Pao_2/Fio_2, $Paco_2$, MAP, HR. Compliance and Vt significantly decreased during positioning, cardiac index significantly increased 30-min post-Rx. 21% incidence of adverse events (minor, transient).	The results did not support the use of lateral positioning to improve oxygenation in ventilated patients without lung pathology or with pulmonary infiltrates.
Vt, peak airway pressure, Pao_2, $Paco_2$ before, during, and immediately post-Rx.	Significant negative correlation between average Vt and lung injury score. Significant positive correlation between average peak airway pressure and lung injury score. Pao_2 significantly improved from pre- to immediately post-Rx. No significant change in $Paco_2$.	Manual hyperventilation causes higher inflation pressures and smaller Vts as the lung score increases, suggesting an increased potential for barotrauma or volutrauma in susceptible lungs.

Qu'est-ce qu'une équation de recherche?



Comment écrire une systematic review?



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	

Page 1 of 2

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

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Signification statistique vs clinique

"Although it is tempting to equate statistical significance with clinical importance, critical readers should avoid this temptation. To be clinically important requires a substantial change in an outcome that matters. Statistically significant changes, however, can be observed with trivial outcomes. And because statistical significance is powerfully influenced by the number of observations, statistically significant changes can be observed with trivial (small) changes in important outcomes. Large studies can be significant without being clinically important and small studies may be important without being significant."

(Effective Clinical Practice, July/August 2001, ACP)

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Original Article

Antibiotic therapy and Effects of Respiratory Physiotherapy Techniques Cystic Fibrosis Patients Treated for Acute Lung Exacerbation: an Experimental Study

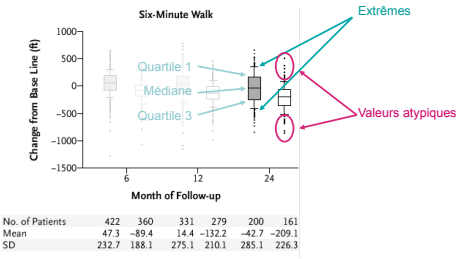
Camila Isabel da Silva Santos[a,*], Maria Angela Gonçalves de Oliveira Ribeiro[a], André Moreno Morcillo[c], Antônio Fernando Ribeiro[c] and José Dirceu Ribeiro[c]

Table 2
Mean and standard deviation of the HR, RF, SpO_2 and lung function parameters in hospitalisation and following discharge from hospital after intravenous antibiotics and respiratory physiotherapy

	Hospitalisation		Discharge		
	Mean	SD	Mean	SD	P value
HR (bpm)	109.0	22.5	99.6	20.6	0.055
RF (rpm)	27.6	8.1	22.5	5.0	0.003
SpO_2 (%)	92.4	4.9	94.6	2.3	0.006
FEV_1 (%)	44.7	21.6	50.0	22.6	0.021
FVC (%)	61.7	21.3	67.3	24.5	0.080
$FEF_{25-75\%}$ (%)	26.3	20.4	31.1	22.0	0.247
PEF (%)	56.2	25.8	66.0	26.0	0.006
IC (%)	63.3	21.2	68.1	21.7	0.129
SVC (%)	62.4	20.7	67.6	21.4	0.098
MVV (%)	53.5	29.4	59.3	26.8	0.065
ERV (%)	62.8	31.1	68.9	45.5	0.586

ERV: expiratory reserve volume; $FEF_{25-75\%}$: forced expiratory flow 25-75%; FEV_1: forced expiratory volume in one second; FVC: forced vital capacity; IC: inhalation capacity; MVV: maximum voluntary ventilation; p: probability of the Wilcoxon test; PEF: peak expiratory flow; SpO_2: oxygen saturation; SVC: slow vital capacity; (%), predictable percentage.

Comment lire un box-plot?



No. of Patients	422	360	331	279	200	161
Mean	47.3	−89.4	14.4	−132.2	−42.7	−209.1
SD	232.7	188.1	275.1	210.1	285.1	226.3

NETT Research Group. N Engl J Med 2003;348:2059-73

Validité externe… important!