

Appendix A

Search Strategy 1

Ovid

Database(s): Embase 1988 to 2017 Week 41, EBM Reviews - Cochrane Central Register of Controlled Trials September 2017, EBM Reviews - Cochrane Database of Systematic Reviews

50 exp Cohort Studies/	2276613
51 exp longitudinal study/	347564
52 exp retrospective study/	1286719
53 exp prospective study/	978255
54 exp population research/	86750
55 exp observational study/	173744
56 clinical study/	108981
57 exp Evaluation Studies/	286274
58 exp quantitative study/	39840
59 exp validation studies/	158895
60 exp quasi experimental study/	4325
61 exp field study/	7951
62 in vivo study/	281996
63 exp panel study/	697
64 exp prevention study/	3306
65 exp replication study/	1714
66 exp Feasibility Studies/	150283
67 exp trend study/	21725
68 exp correlational study/	26940
69 exp case-control studies/	1097656
70 exp confidence interval/	166287
71 exp regression analysis/	790679
72 exp proportional hazards model/	150688
((evidence adj based) or (meta adj analys*) or (systematic* adj3 review*) or "consensus development" or guideline* or "position statement*" or (control* adj3 study) or (control* adj3 trial) or (randomized adj3 study) or (randomized adj3 trial) or (randomised adj3 study) or (randomised adj3 trial) or "pragmatic clinical trial" or (random* adj1 allocat*) or (doubl* adj blind*) or (doubl* adj mask*) or (singl* adj blind*) or (singl* adj mask*) or (tripl* adj blind*) or (tripl* adj mask*) or (trebl* adj blind*) or (trebl* adj mask*) or "latin square" or placebo* or nocebo* or multivariate or "comparative study" or "comparative survey" or "comparative analysis" or (intervention* adj2 study) or (intervention* adj2 trial) or crossover or "cross-over" or cohort* or "longitudinal study" or "longitudinal survey" or "longitudinal analysis" or "longitudinal evaluation" or longitudinal* or ((retrospective or "ex post facto") adj3 (study or survey or analysis or design)) or retrospectiv* or "prospective study" or "prospective survey" or "prospective analysis" or prospectiv* or (population adj3 (stud* or survey* or analys* or research)) or "concurrent study" or "concurrent survey" or "concurrent analysis" or "incidence study" or "incidence survey" or "incidence analysis" or (("follow-up" or followup) adj (stud* or survey or analysis)) or ((observation or observational) adj (study or survey or analysis)) or "clinical study" or "clinical trial" or "evaluation	19844960

study" or "evaluation survey" or "evaluation analysis" or "quantitative study" or "quantitative analys*" or "numerical study" or "validation study" or "validation survey" or "validation analysis" or "quasi experimental study" or "quasi experimental analysis" or "quasiexperimental study" or "quasiexperimental analysis" or "field study" or "field survey" or "field analysis" or "in vivo study" or "in vivo analysis" or "panel study" or "panel survey" or "panel analysis" or ((prevention or preventive) adj3 (trial or study or analysis or survey)) or "replication study" or "replication analysis " or "replication trial" or "feasibility study" or "feasibility analysis" or "trend study" or "trend survey" or "trend analysis" or ((correlation* adj2 study) or (correlation* adj2 analys*)) or "case control study" or "case base study" or "case referrent study" or "case referent study" or "casr(")8(c)4(a)4(s)-11e study" or01(tu)2(d)-8(y)22(53-4(t)-6(ud0(n)5 -26

Scopus

- 1 TITLE(BiPAP or BPAP or CPAP or "noninvasive positive pressure ventilation" or "non-invasive positive pressure ventilation" or "noninvasive ventilation" or "non-invasive ventilation" or NPPV or "Positive Airway Pressure*" or "positive end-expiratory pressure*")
- 2 TITLE("Amyotrophic lateral sclerosis" or "Atrophic Muscular Disorder*" or Bronchiectasis or "Chronic Obstructive Pulmonary Disease*" or "congenital structural myopath*" or "Cystic Fibrosis" or hypercapnia or hypoventilation or "Interstitial Lung Disease*" or kyphosis or "Motor Neuron Disease*" or "Muscular Disease*" or Myositis or "Myotonic Disorder*" or "Neuromuscular Disease*" or Obesity or "obstructive lung disease*" or "Pulmonary fibrosis" or "respiratory failure" or "respiratory insufficiency" or scoliosis or "Spinal Cord Injur*" or "Spinal Muscular Atrophy" or "structural congenital myopath*")
- 3 TITLE-ABS-KEY((evidence W/1 based) or (meta W/1 analys*) or (systematic* W/3 review*) or "consensus development" or guideline* or "position statement*" or (control* W/3 study) or (control* W/3 trial) or (randomized W/3 study) or (randomized W/3 trial) or (randomised W/3 study) or (randomised W/3 trial) or "pragmatic clinical trial" or (random* W/1 allocat*) or (doubl* W/1 blind*) or (doubl* W/1 mask*) or (singl* W/1 blind*) or (singl* W/1 mask*) or (tripl* W/1 blind*) or (tripl* W/1 mask*) or (trebl* W/1 blind*) or (trebl* W/1 mask*) or "latin square" or placebo* or nocebo* or multivariate or "comparative study" or "comparative survey" or "comparative analysis" or (intervention* W/2 study) or (intervention* W/2 trial) or crossover or "cross-over" or cohort* or "longitudinal study" or "longitudinal survey" or "longitudinal analysis" or "longitudinal evaluation" or longitudinal* or ((retrospective or "ex post facto") W/3 (study or survey or analysis or design)) or retrospectiv* or "prospective study" or "prospective survey" or "prospective analysis" or prospectiv* or (population W/3 (stud* or survey* or analys* or research)) or "concurrent study" or "concurrent survey" or "concurrent analysis" or "incidence study" or "incidence survey" or "incidence analysis" or (("follow-up" or followup) W/1 (stud* or survey or analysis)) or ((observation or observational) W/1 (study or survey or analysis)) or "clinical study" or "clinical trial" or "evaluation study" or "evaluation survey" or "evaluation analysis" or "quantitative study" or "quantitative analys*" or "numerical study" or "validation study" or "validation survey" or "validation analysis" or "quasi experimental study" or "quasi experimental analysis" or "quasiexperimental study" or "quasiexperimental analysis" or "field study" or "field survey" or "field analysis" or "in vivo study" or "in vivo analysis" or "panel study" or "panel survey" or "panel analysis" or ((prevention or preventive) W/3 (trial or study or analysis or survey)) or "replication study" or "replication analysis" or "replication trial" or "feasibility study" or "feasibility analysis" or "trend study" or "trend survey" or "trend analysis" or ((correlation* W/2 study) or (correlation* W/2 analys*)) or "case control study" or "case base study" or "case referrent study" or "case referent study" or "case referent study" or "case compeer study" or "case comparison study" or "matched case control" or "multicenter study" or "multi-center study" or "odds ratio" or "confidence interval" or (hazard* W/1 (model* or analys* or regression or ratio or ratios)) or "Cox model" or "Cox multivariate analyses" or "Cox multivariate analysis" or "Cox regression" or "Cox survival analyses" or "Cox survival analysis" or "Cox survival model" or "change analysis" or ((study or trial or random* or control*) and compar*))
- 4 PUBYEAR AFT 1994
- 5 1 and 2 and 3 and 4
- 6 TITLE-ABS-KEY(newborn* or neonat* or infant* or toddler* or child* or adolescent* or paediatric* or pediatric* or girl or girls or boy or boys or teen or teens or teenager* or preschooler* or "pre-schooler*" or preteen or preteens or "pre-teen" or "pre-teens" or youth or

youths) AND NOT TITLE-ABS-KEY(adult or adults or "middle age" or "middle aged" OR elderly OR geriatric* OR "old people" OR "old person*" OR "older people" OR "older person*" OR "very old")

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11 9 and not 10

All limited to Adults

("Amyotrophic lateral sclerosis" or "Atrophic Muscular Disorder*" or Bronchiectasis or "Chronic Obstructive Pulmonary Disease*" or "congenital structural myopath*" or "Cystic Fibrosis" or hypercapnia or hypoventilation or "Interstitial Lung Disease*") AND (BiPAP or BPAP or CPAP or "noninvasive positive pressure ventilation" or "non-invasive positive pressure ventilation" or NPPV or "Positive Airway Pressure*" or "positive end-expiratory pressure*")

(kyphosis or "Motor Neuron Disease*" or "Muscular Disease*" or Myositis or "Myotonic Disorder*" or "Neuromuscular Disease*" or Obesity or "obstructive lung disease*" or "Pulmonary fibrosis" or "respiratory failure" or "respiratory insufficiency") AND (BiPAP or BPAP or CPAP or "noninvasive positive pressure ventilation" or "non-invasive positive pressure ventilation" or NPPV or "Positive Airway Pressure*" or "positive end-expiratory pressure*")

(scoliosis or "Spinal Cord Injur*" or "Spinal Muscular Atrophy" or "structural congenital myopath*") AND (BiPAP or BPAP or CPAP or "noninvasive positive pressure ventilation" or "non-invasive positive pressure ventilation" or NPPV or "Positive Airway Pressure*" or "positive end-expiratory pressure*")

13 12 not 10	1151
14 8 not 13	5923
15 exp Guideline/ or exp Practice Guideline/	460813
16 exp meta analysis/	226262
17 exp Meta-Analysis as Topic/	54850
18 exp "systematic review"/	150940
19 exp controlled study/	5963423
20 exp Randomized Controlled Trial/	954864
21 exp triple blind procedure/	176
22 exp Double-Blind Method/	413595
23 exp Single-Blind Method/	73073
24 exp latin square design/	344
25 exp comparative study/	2882943
26 exp Cohort Studies/	2274617
27 exp longitudinal study/	347374
28 exp retrospective study/	1285773
29 exp prospective study/	977682
30 exp population research/	86750
31 exp observational study/	173529
32 clinical study/	108976
33 exp Evaluation Studies/	286098
34 exp quantitative study/	39840
35 exp validation studies/	158763
36 exp quasi experimental study/	4323
37 exp field study/	7950
38 in vivo study/	281996
39 exp panel study/	697
40 exp prevention study/	3306
41 exp replication study/	1714
42 exp Feasibility Studies/	150190
43 exp trend study/	21725
44 exp correlational study/	26940
45 exp case-control studies/	1096450
46 exp confidence interval/	166269
47 exp regression analysis/	790181
48 exp proportional hazards model/	150544
49 ((evidence adj based) or (meta adj analys*) or (systematic* adj3 review*) or "consensus development" or guideline* or "position statement*" or (control* adj3	19833017

study) or (control* adj3 trial) or (randomized adj3 study) or (randomized adj3 trial) or (randomised adj3 study) or (randomised adj3 trial) or "pragmatic clinical trial" or (random* adj1 allocat*) or (doubl* adj blind*) or (doubl* adj mask*) or (singl* adj blind*) or (singl* adj mask*) or (tripl* adj blind*) or (tripl* adj mask*) or (trebl* adj blind*) or (trebl* adj mask*) or "latin square" or placebo* or nocebo* or multivariate or "comparative study" or "comparative survey" or "comparative analysis" or (intervention* adj2 study) or (intervention* adj2 trial) or crossover or "cross-over" or cohort* or "longitudinal study" or "longitudinal survey" or "longitudinal analysis" or "longitudinal evaluation" or longitudinal* or ((retrospective or "ex post facto") adj3 (study or survey or analysis or design)) or retrospectiv* or "prospective study" or "prospective survey" or "prospective analysis" or prospectiv* or (population adj3 (stud* or survey* or analys* or research)) or "concurrent study" or "concurrent survey" or "concurrent analysis" or "incidence study" or "incidence survey" or "incidence analysis" or (("follow-up" or followup) adj (stud* or survey or analysis)) or ((observation or observational) adj (study or survey or analysis)) or "clinical study" or "clinical trial" or "evaluation study" or "evaluation survey" or "evaluation analysis" or "quantitative study" or "quantitative analys*" or "numerical study" or "validation study" or "validation survey" or "validation analysis" or "quasi experimental study" or "quasi experimental analysis" or "quasiexperimental study" or "quasiexperimental analysis" or "field study" or "field survey" or "field analysis" or "in vivo study" or "in vivo analysis" or "panel study" or "panel survey" or "panel analysis" or ((prevention or preventive) adj3 (trial or study or analysis or survey)) or "replication study" or "replication analysis" or "replication trial" or "feasibility study" or "feasibility analysis" or "trend study" or "trend survey" or "trend analysis" or ((correlation* adj2 study) or (correlation* adj2 analys*)) or "case control study" or "case base study" or "case referrent study" or "case referent study" or "case referent study" or "case compeer study" or "case comparison study" or "matched case control" or "multicenter study" or "multi-center study" or "odds ratio" or "confidence interval" or (hazard* adj (model* or analys* or regression or ratio or ratios)) or "Cox model" or "Cox multivariate analyses" or "Cox multivariate analysis" or "Cox regression" or "Cox survival analyses" or "Cox survival analysis" or "Cox survival model" or "change analysis" or ((study or trial or random* or control*) and compar*).mp,pt.

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- 1 TITLE-ABS-KEY(((domestic or home or domiciliary) W/3 (residence or residences or setting or settings or care or nurs* or help or service* or treatment* or therap* or "respiratory care" or "respiratory treatment*" or "respiratory therap*" or "respiratory service*" or "respiratory assist*" or ventilat*)) OR "assisted living" OR homecare or HMV)
- 2 TITLE-ABS-KEY(((facial or face or nasal) W/3 mask*) OR ((respiration* or respiratory or breathing) W/3 (assist* or controlled or mechanical)) OR "artificial respiration*" OR BiPAP OR CPAP OR "Fluidic Breathing Assister" OR HMV OR IPPB OR IPPV OR NIAV OR NIV OR NPPV OR "Oxygen Regulator*" OR PAP OR PAV OR "Portable Oxygen" OR "Positive Airway Pressure*" OR "positive end-expiratory pressure*" OR "positive pressure*" OR respirator OR respirators OR "Respiratory insufficiency" OR Tracheostom* OR ventilation OR ventilator*)
- 3 TITLE-ABS-KEY((evidence W/1 based) or (meta W/1 analys*) or (systematic* W/3 review*) or "consensus development" or guideline* or "position statement*" or (control* W/3 study) or (control* W/3 trial) or (randomized W/3 study) or (randomized W/3 trial) or (randomised W/3 study) or (randomised W/3 trial) or "pragmatic clinical trial" or (random* W/1 allocat*) or (doubl* W/1 blind*) or (doubl* W/1 mask*) or (singl* W/1 blind*) or (singl* W/1 mask*) or (tripl* W/1 blind*) or (tripl* W/1 mask*) or (trebl* W/1 blind*) or (trebl* W/1 mask*) or "latin square" or placebo* or nocebo* or multivariate or "comparative study" or "comparative survey" or "comparative analysis" or (intervention* W/2 study) or (intervention* W/2 trial) or crossover or "cross-over" or cohort* or "longitudinal study" or "longitudinal survey" or "longitudinal analysis" or "longitudinal evaluation" or longitudinal* or ((retrospective or "ex post facto") W/3 (study or survey or analysis or design)) or retrospectiv* or "prospective study" or "prospective survey" or "prospective analysis" or prospectiv* or (population W/3 (stud* or survey* or analys* or research)) or "concurrent study" or "concurrent survey" or "concurrent analysis" or "incidence study" or "incidence survey" or "incidence analysis" or (("follow-up" or followup) W/1 (stud* or survey or analysis)) or ((observation or observational) W/1 (study or survey or analysis)) or "clinical study" or "clinical trial" or "evaluation study" or "evaluation survey" or "evaluation analysis" or "quantitative study" or "quantitative analys*" or "numerical study" or "validation study" or "validation survey" or "validation analysis" or "quasi experimental study" or "quasi experimental analysis" or "quasiexperimental study" or "quasiexperimental analysis" or "field study" or "field survey" or "field analysis" or "in vivo study" or "in vivo analysis" or "panel study" or "panel survey" or "panel analysis" or ((prevention or preventive) W/3 (trial or study or analysis or survey)) or "replication study" or "replication analysis" or "replication trial" or "feasibility study" or "feasibility analysis" or "trend study" or "trend survey" or "trend analysis" or ((correlation* W/2 study) or (correlation* W/2 analys*)) or "case control study" or "case base study" or "case referrent study" or "case referent study" or "case referent study" or "case compeer study" or "case comparison study" or "matched case control" or "multicenter study" or "multi-center study" or "odds ratio" or "confidence interval" or (hazard* W/1 (model* or analys* or regression or ratio or ratios)) or "Cox model" or "Cox multivariate analyses" or "Cox multivariate analysis" or "Cox regression" or "Cox survival analyses" or "Cox survival analysis" or "Cox survival model" or "change analysis" or ((study or trial or random* or control*) and compar*))
- 4 1 and 2 and 3
- 5 TITLE-ABS-KEY(newborn* or neonat* or infant* or toddler* or child* or adolescent* or

geriatric* OR "old people" OR "old person*" OR "older people" OR "older person*" OR "very old")

6

National Guidelines Clearinghouse

((home OR domestic OR domiciliary or homecare or "assisted living" or HMV) AND (BiPAP OR CPAP OR "face mask*" OR "facial mask*" OR "Fluidic Breathing Assister" OR HMV OR IPPB OR IPPV OR "nasal mask*" OR NIAV OR NIV OR NPPV OR "Oxygen Regulator*" OR PAP OR PAV OR "Portable Oxygen" OR "Positive Airway Pressure*" OR "positive end-expiratory pressure*" OR "positive pressure*" OR respirat* OR Tracheostom* OR ventilat*)) NOT "nursing home*"

ClinicalTrials.gov

All limited to Adults

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND ((facial OR face OR nasal) AND mask*)

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND ((respiration* OR respiratory OR breathing) AND (assist* OR controlled OR mechanical))

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND ("artificial respiration*" OR BiPAP OR CPAP OR "Fluidic Breathing Assister" OR HMV OR IPPB)

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND (IPPV OR NIAV OR NIV OR NPPV OR "Oxygen Regulator*" OR PAP OR PAV OR "Portable Oxygen")

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND ("Positive Airway Pressure*" OR "positive end-expiratory pressure*" OR "positive pressure*" OR
respirator)

((domestic OR home OR domiciliary OR homecare OR "assisted living") NOT "nursing home")
AND (respirators OR "Respiratory insufficiency" OR Tracheostom* OR ventilation OR ventilator*)