Guideline Reference number	Authors	Year	Journal	Title	Full review or background infromation only	Brief decription of issues relevant to guideline including the intervention, comparison and outcome	Which catgeory best describes study?	Number of subjects	If RCT please give details of randomisation	Was it a blinded study?	Risk of Bias	Assessment of quality of paper (SIGN level of evidence)
50	M. A. Austin, K. E. Wills, L. Blizzard, E. H. Walters and R. Wood-Baker	2010	BMJ	Effect of high flow oxygen on mortality in chronic obstructive pulmonary disease patients in prehospital setting: randomised controlled trial	Full review	randomised trial of targeted oxygen therapy in acute exacerbations of COPD (AECOPD).	RCT	405	Cluster randomised controlled parallel group trial	No	Low	1+
201	Lightowler JVJ, Elliott MW.	1997	J R Coll Physicians Lond 1997;31:645–6.	Local anaesthetic infiltration prior to arterial puncture: a survey of current practice and a randomised double blind placebo controlled trial	Full review	ABG	RCT	101	Not clear	Yes	Low	1+
202	Giner J, Casan P, Belda J, González M, Miralda RM, Sanchis J.	1996	Chest	Pain during arterial puncture	Full review	ABG	RCT	210	Not stated "randomly given local anaesthetic	Yes	Low	1+
351	Fogan L.	1985	Arch Neurol 1985;42(4):362-3	Treatment of cluster headache. A double-blind comparison of oxygen v air inhalation.	Full review	Single centre. Inhalation of 6 l/min x 15mins pre-analgesia vs air. x 6 headaches treated before blind cross-over. Outcome measure: subjective measure (tool not validated). Results: Nine (56%) patients had complete or substantial relief in 80% of headaches with oxygen; one (7%) with air. Average relief score: oxygen - 1.93 ± 0.22; air - 0.77 ± 0.23. Analysis of variance used to incorporate the incomplete data sets and showed highly significant difference between air and O2 ($F = 11.50$; $p < 0.01$)Five out of 19 patients opted to continue with oxygen (phase 2).	Double blind randomised placebo-controlled cross-over.	19 but only 11 evaluated both gases (all results accounted for and included in ANOVA). Diagnosed 'cluster headache' (Age 20-50; all male)	Details of randomisation not apparent but allocation was concealed to researchers.	Yes	High	1-

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353	Cohen AS, Burns B, Goadsby PJ.	2009	JAMA	High-flow oxygen for treatment of cluster headache: a randomized trial. Journal of the American Medical Association. 2009; 302(22):2451-2457.	Full review	Single centre. Inhalation of 12 l/min x 15mins pre-analgesia vs air. X 4 attacks. Cross-over at each attack. Pain points measured at 5, 10, 15, 30 and 60 mins. Outcome measures: primary: pain free [subjective pain scale] at 15 mins; secondary: pain free [subjective pain scale] at 30 mins, reduction in pain scale at 15,30,45, & 60 mins; need for rescue medication; associated symptoms; subjective functional ability. Results: Primary end point - O_2 78% (narrow CI 71-85%); air 20% (CI 14-26); Wald test – $p < 0.001$	Double blind randomised placebo-controlled cross-over trial.	109 but only 76 received treatment (episodic cluster headache n=57 & chronic cluster headache n=19). Flowchart suggests 33 randomised to non-treatment but this actually seems to reflect those lost to follow-up etc.	Opaque sealed envelopes to determine order of live or placebo treatment.	yes	High	1-
391	N. Milman, P. Faurschou, G. Grode and A. Jorgensen	1994	RESPIRATION	Pulse oximetry during fibreoptic bronchoscopy in local anaesthesia: frequency of hypoxaemia and effect of oxygen supplementation	Full review	O2 supplementation during LA broncoscopy	RCT	(Age 18-70; male 64	No details given	No	High	1-
398	Van Zwam et al	2010	J of bronch and interv pulmon	Flexible bronchoscopy in supine or sitting position: a randomised prospecitve analysis of safety and patient comfort	Full review	107 consecutive patients undergoing FOB assigned to siting or supine positioning for procedure in open label study. Sitting position showed relative risk of 2.46 for significant desaturation.	RCT	107	No details	No	High	1-
400	Jones AM O'Driscoll BR	2001	Chest	Do all patients require supplemental oxygen during flexible bronchoscopy?	Full review	Prospective large cohort study of 1051 FOB procedures in patients with known FEV1. 14% of cases received oxygen during or immediately after the procedure (due to significant desaturation SpO2<90% for minimum 20seconds). The lower the FEV1 the more likely the need for supplemental O2. Many desaturations (10%) were transient and did not require intervention.	Cohort study	1051			Low	2+

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403	R. Block, J. Jankowski, D. Johnston, J. R. Colvin and K. G. Wormsley	1993	ENDOSCOPY	The administration of supplementary oxygen to prevent hypoxia during upper alimentary endoscopy	Full review	Prospective RCT in patients undergoing upper GI endoscopy, 100 patients given supplemental O2 at 4L/min and 100 given no supplemental O2. 48 of those not receiving O2 exhibited desaturation (<93%); no desaturation in group administered O2	RCT	200			High	1-
414	K. Deitch, C. R. Chudnofsky and P. Dominici	2007	ANNALS OF EMERGENCY MEDICINE	The utility of supplemental oxygen during emergency department procedural sedation and analgesia with midazolam and fentanyl: a randomized, controlled trial	Full review	No reduction in incidence of hypoxaemia observed in sedated (fentanyl or midazolam-moderate sedation) patients during emergency department procedures (abscess drainage and fracture reduction). Patients undergoing procedures during conscious sedation in ED randomised to receive either air or oxygen at 2L/min with measurements of oximetry and end-tidal carbon dioxide. Supplemental oxygen administration did not reduce the incidence of hypoxia. End-tidal carbon dioxide measurements increased the identification of respiratory depression.	RCT	1. 83 (some children included)	1. utilisation of computer generated sequential randomisation table	Double blinded	Medium	1-
415	K. Deitch, C. R. Chudnofsky and P. Dominici	2008	ANNALS OF EMERGENCY MEDICINE	The utility of supplemental oxygen during emergency department procedural sedation with propofol: a randomized, controlled trial	Full review	Though supplemental oxygen tended towards reducing the incidence of hypoxaemia in painful emergency department procedures this was not significant (p=0.3)Patients undergoing procedures during conscious sedation in ED randomised to receive either air or oxygen at 3L/min with measurements of oximetry and end-tidal carbon dioxide. There was no difference in the incidence of hypoxia between the 2 groups. End-tidal carbon dioxide measurements increased the identification of respiratory depression.	RCT	110 > 18 yrs	1. Sequential computer generated number assignment	Double blinded	Medium	1-

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419	S. Booth, M. J. Kelly, N. P. Cox, L. Adams and A. Guz	1996	AMERICAN JOURNAL OF RESPIRATORY & CRITICAL CARE MEDICINE	Does oxygen help dyspnea in patients with cancer?	Full review	Palliative care	RCT	38		Single blinded	Low	1+
420	E. Bruera, N. de Stoutz, A. Velasco-Leiva, T. Schoeller and J. Hanson	1993	LANCET	Effects of oxygen on dyspnoea in hypoxaemic terminal-cancer patients	Full review	Assessing whether patients (presumably inpatients) with hypoxaemic cancer (Oxygen sat <90%) benfitted from oxygen 5L/min crossing over double blind with air so that patients got both twice at 5 minute intervals. Outcome: 12 of 14 patients recorded benefit using a visual analogue scale.	RCT	14	Each patient acted as their own control (n of 1)	Double blinded	High	1-
421	D. C. Currow, M. Agar, J. Smith and A. P. Abernethy	2009	PALLIATIVE MEDICINE	Does palliative home oxygen improve dyspnoea? A consecutive cohort study	Full review	Palliative care	Cohort study/post hoc analysis	413			High/V high	2-
422	J. M. Cranston, A. Crockett and D. Currow	2008	Cochrane Database of Systematic Reviews	Oxygen therapy for dyspnoea in adults	Full review	Palliative care	Systematic review	144			High	1-
426	Clemens K E et al	2009	Support Cancer Care	Use of oxygen and opioids in the palliation of dyspnea in hypoxic and non-hypoxic palliative care patients a prosective study	Full review	Effect of opioids on breathlessness in palliative care, effect of oygen on breathlessness in palliative care	Non randomised trial	46		No	Moderate	2+
427	Ben-Aharon I,Gafter-Gvili A et al	2012	Acta Oncol	Interventions for alleviating cancer-related dyspnea: a systematic review and meta-analysis	Full review	Systematic review of RCTS of pharmacological and non-phamrmacological therapy for breathlessness in cancer patients	Systematic review	256 for opioids		Mostly blinded studies	Moderate due to small numbers and limitiation in the data as discussed by the authors	1-

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430	G. J. Rodrigo, C. Rodrigo, C. V. Pollack and B. Rowe	2003	CHEST	Use of helium-oxygen mixtures in the treatment of acute asthma: a systematic review	Full review	Use of heliox mixtures in adults and children with asthma. Seven trials, 392 patients with acute asthma. Six studies involved adults, and one study children. The main outcome variable was spirometric measurements (peak expiratory flow or FEV1) in six trials. Two studies evaluated the effect of heliox on airways resistance. No significant differences were demonstrated between heliox or oxygen/air groups (standardized mean difference [SMD], _ 0.20; 95% confidence interval [CI], _ 0.91 to 0.51; p = 0.6). Four studies that used heliox to deliver nebulized therapy showed a nonsignificant increase in pulmonary function (SMD, _ 0.21; 95% CI, _ 0.43 to 0.01; p = 0.06). In two studies of the same subgroup, heliox mixtures produced a significantly greater increase of heart rate than	Systematic review or meta-analysis	89 studies identified and 7 trials with 392 patients included in final analysis			High	1-
431	C. L. Colebourn, V. Barber and J. D. Young	2007	ANAESTHESIA	Use of helium-oxygen mixture in adult patients presenting with exacerbations of asthma and chronic obstructive pulmonary disease: a systematic review	Full review	Clinical effects of use of heliox mixtures – asthma and COPD Systematic review of all controlled and cross-over RCTs in patients with acute exacerbations of asthma or COPD comparing Heliox mixtures and air/oxygen mixtures. No benefit of heliox over air/oxygen mixtures.	Systematic review or meta-analysis	14 articles (6 asthma studies and 8 COPD studies) , Approx 400 patients.			High	1-
432	D. C. Brandao, M. C. Britto, M. F. Pessoa, R. B. de Sa, L. Alcoforado, L. O. Matos, T. N. Silva and A. D. de Andrade	2011	Respiratory Care	Heliox and forward-leaning posture improve the efficacy of nebulized bronchodilator in acute asthma: a randomized trial	Full review		RCP	59			High	1-

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442	Vital FM, Ladeira MT, Phillips Hughes J et al	2013	Cochrane Database of Systematic Reviews	Noninvasive positive pressure ventilation (CPAP or bilevell NPPV) for cardiogenic pulmonary oedema	Full review	NPPV, especially CPAP in addition to standard medical care is an effective and safe intervention for the treatmentof adults patients with acute cardiogenic pulmonary odema. Evidence that mortality and intubation rates were reduced.	Meta analysis	5775				1+
443	Gray A, Goodacre S, Newby DE, Masson M, Sampson F, Nicholl J for the 3CPO triallists	2008	NEJM	Non invasive ventilation in acute cardiogenic edema	Full review	Non invastive ventilation in acute cardiogenic edema NEJM 2008 was a large multicentre prospective RCT study with 1069 patients. Confirmed short term physiological benefits but did not find any short term mortality benefits.	RCT	1069				1+