Appendix K-Forest Plots

Diagnosis

Diagnosis and accuracy of diagnostic test

Figure 6.1: forest plot of DSM-III-R diagnostic test with DSM-IV as a reference standard in a hospital setting

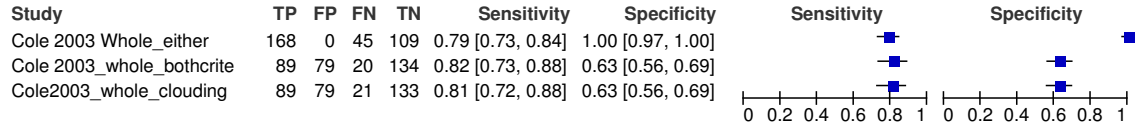


Figure 6.2: forest plot of DSM-III diagnostic test with DSM-III-R as a reference standard in a hospital setting

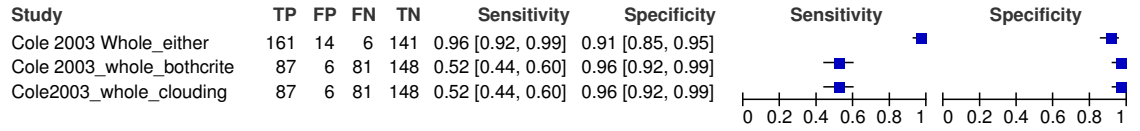


Figure 6.3: forest plot of ICD-10 diagnostic test with DSM-III-R as a reference standard in a hospital setting

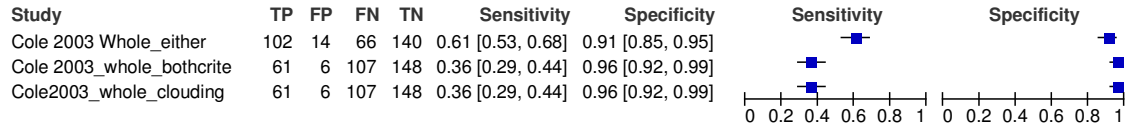


Figure 6.4: forest plot of DSM-III-R compared with DSM-IV in a hospital setting- subgroup analyses

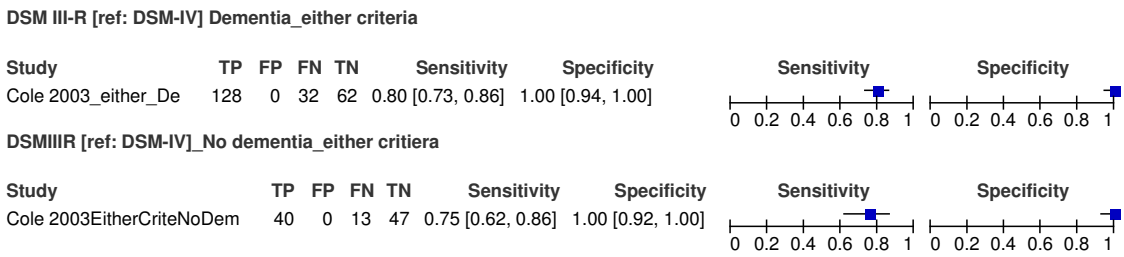


Figure 6.5: forest plot of DSM-III-R compared with DSM-III-R in a hospital setting - subgroup analyses

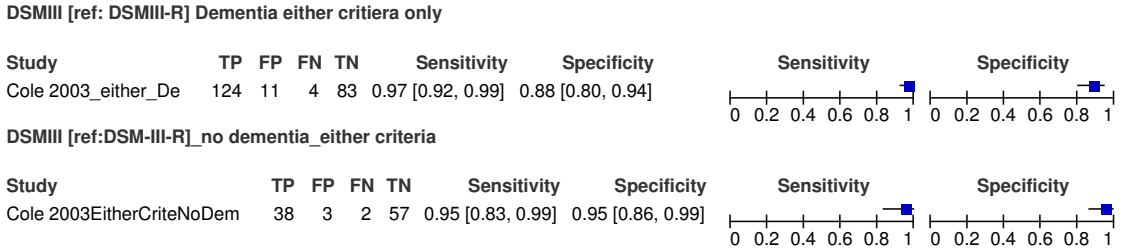


Figure 6.6: forest plot of ICD-10 compared with DSM-III-R in a hospital setting- subgroup analyses

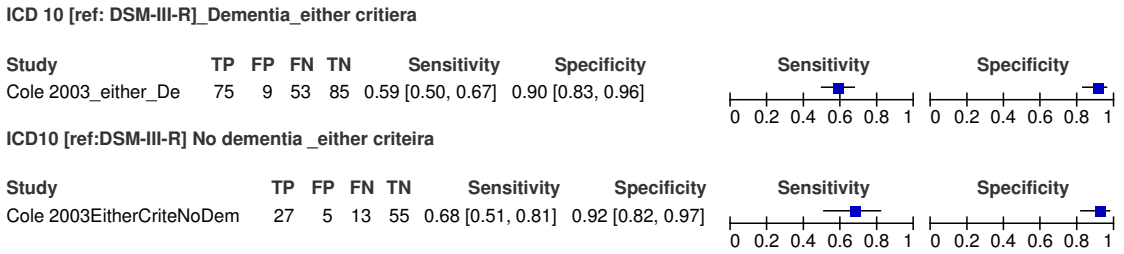


Figure 6.7: forest plot of index tests compared with DSM-IV in a hospital setting

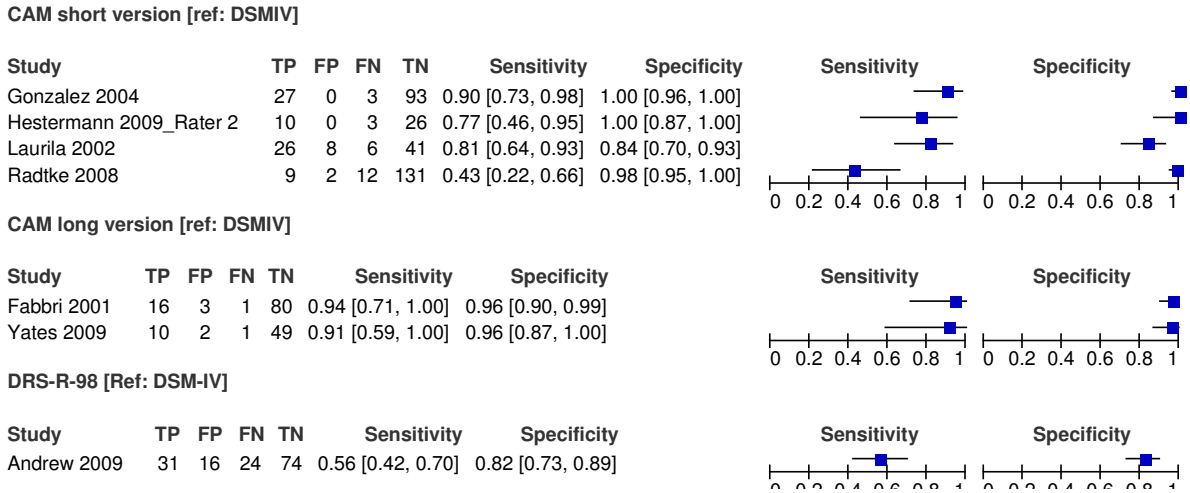


Figure 6.8: forest plot of DRS-R-98 compared with DSM-IV in a hospital setting- subgroup analysis

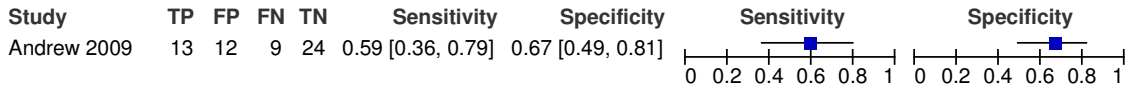


Figure 6.9: forest plot of CAM compared with ICD-10 in a hospital setting- subgroup analysis

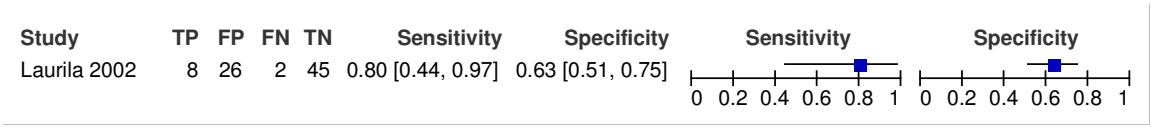
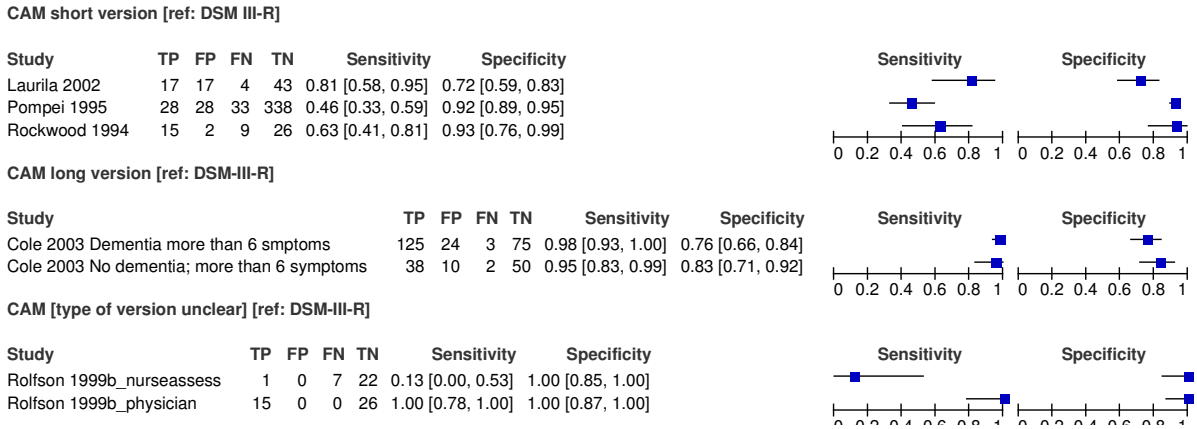


Figure 6.10: forest plot of index test compared with DSM-III-R



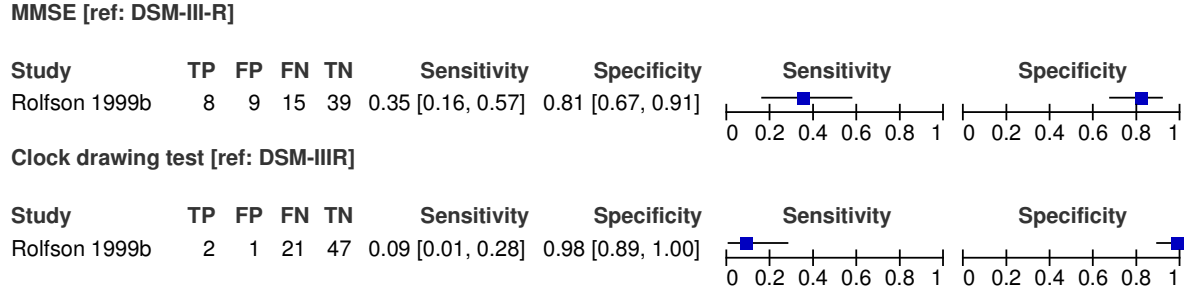
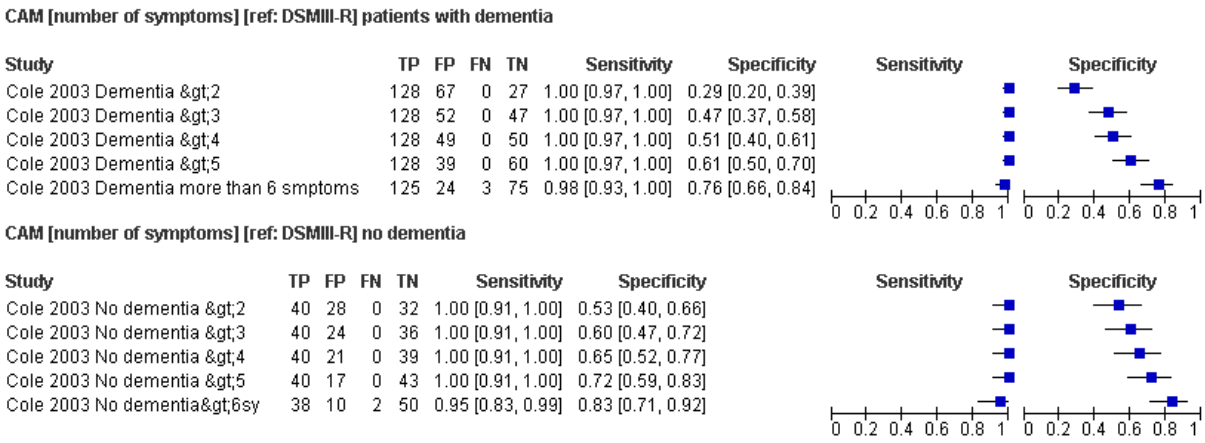


Figure 6.11: forest plot of number of symptoms in index test compared with DSMIII-R as the reference standard in a hospital setting



NB: &gt indicates 'more than'; '&gt2' would indicate 'more than 2 symptoms'

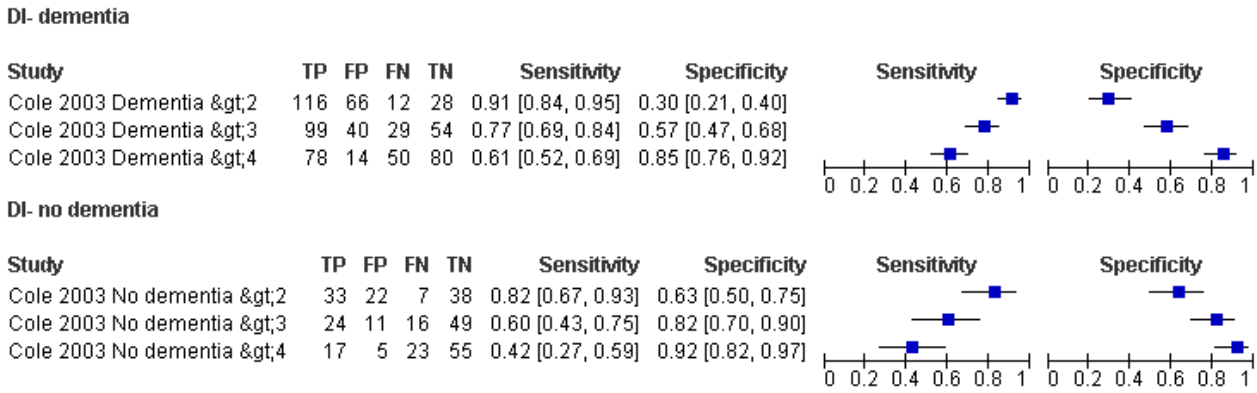


Figure 6.12: ROC plot of effects of varying threshold for CAM and DI compared with DSM-III-R

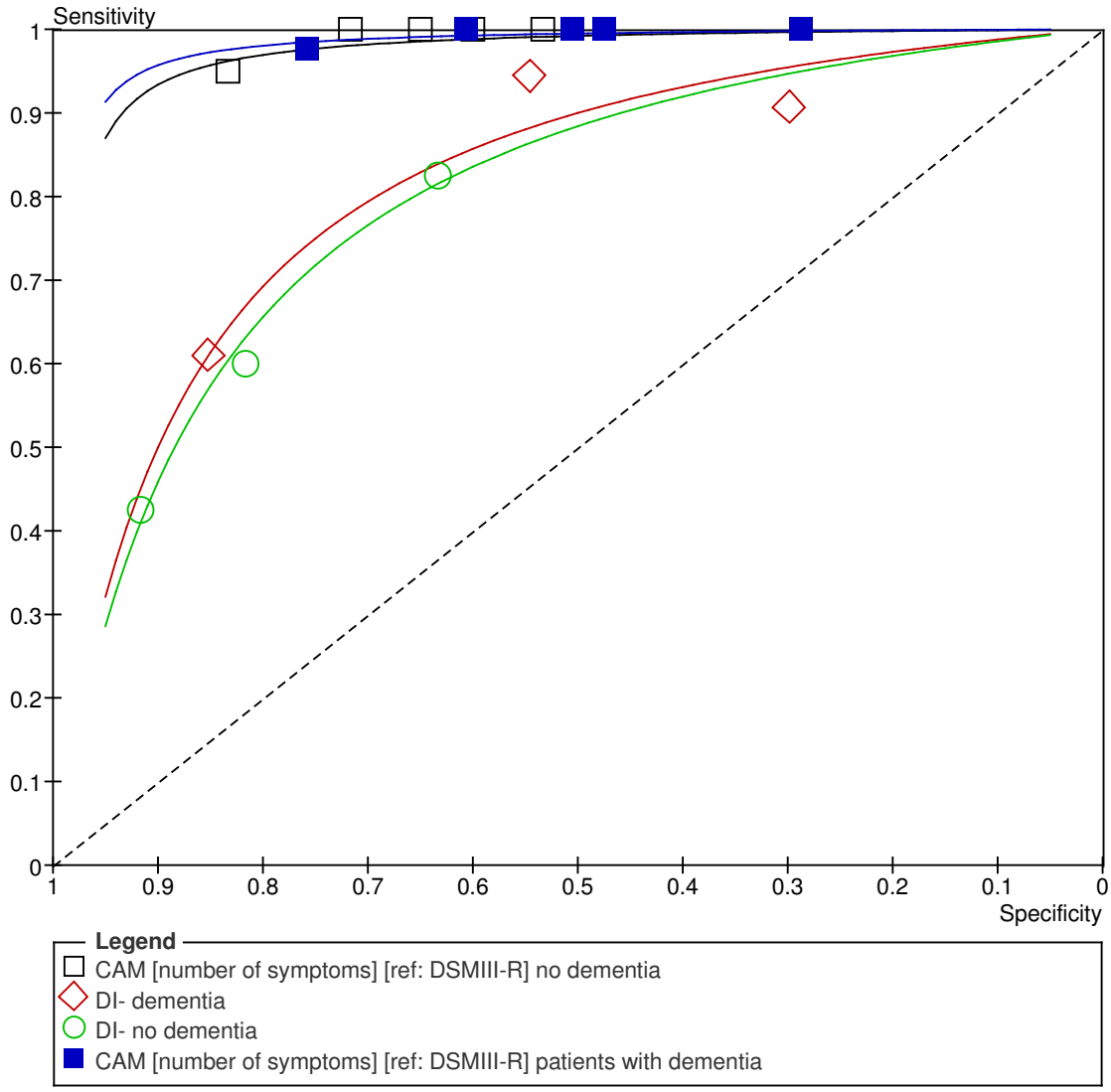


Figure 6.13: forest plot of index tests with DSM-III as the reference standard in a hospital setting

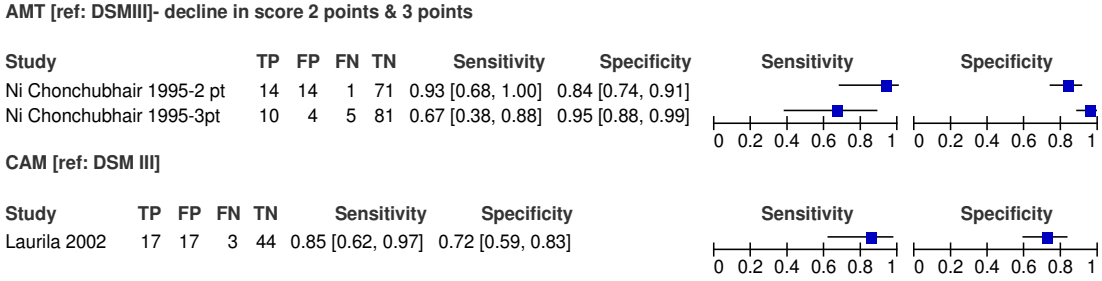


Figure 6.14: forest plot of index test compared with consensus diagnosis as the reference standard in a hospital setting

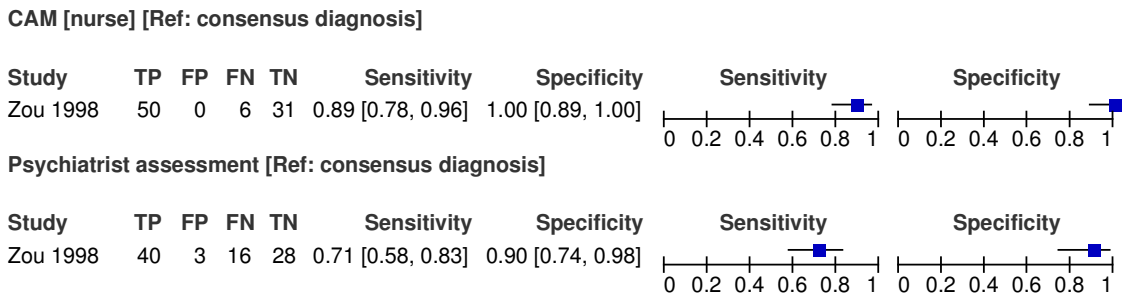


Figure 6.15: forest plot of index test compared with CAM (short version) and clinical interview as the reference standard

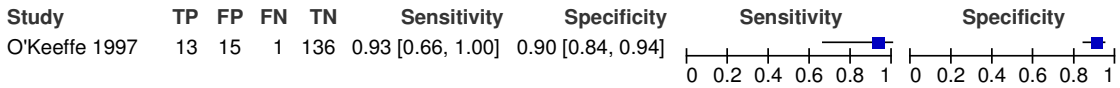


Figure 6.16: forest plot CAM (lay person) compared with CAM (geriatrician) - subgroup analyses

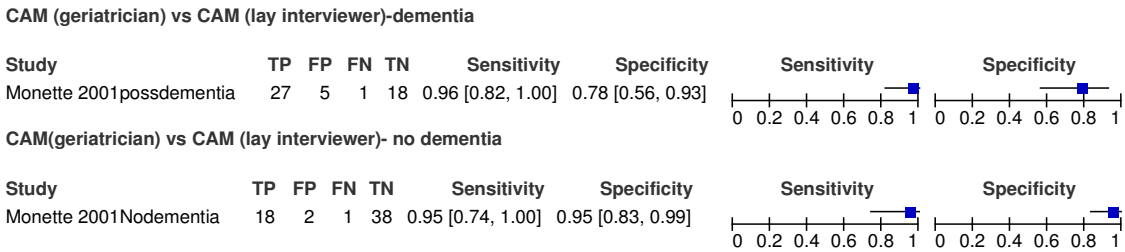


Figure 6.17: forest plot of CAM-ICU index test with DSM-IV as reference standard in an ICU setting

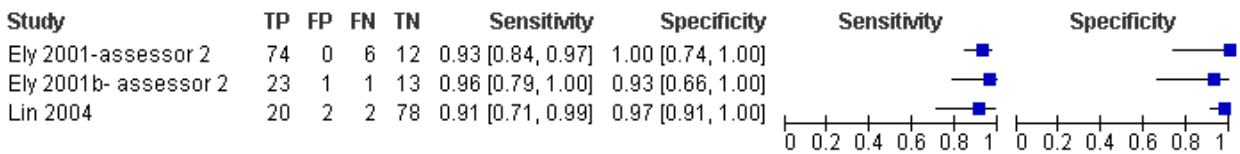
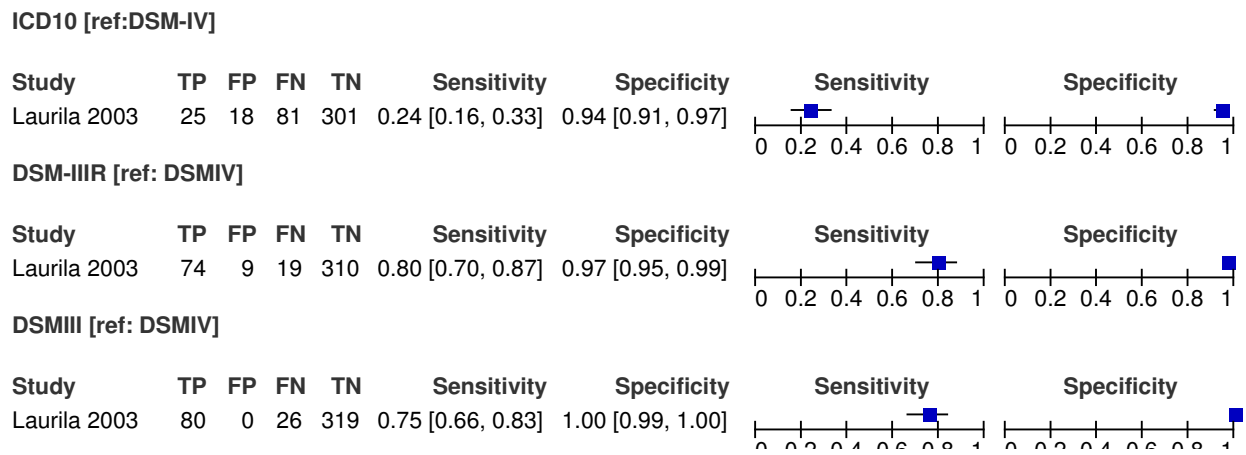


Figure 6.18: forest plot of ICD-10, DSM-III-R and DSM-III compared with DSM-IV; mixed setting (hospital and long-term care)



Risk factors for delirium: non-pharmacological

Figure 7.1: hospital unit as a risk factor for an increased severity of delirium

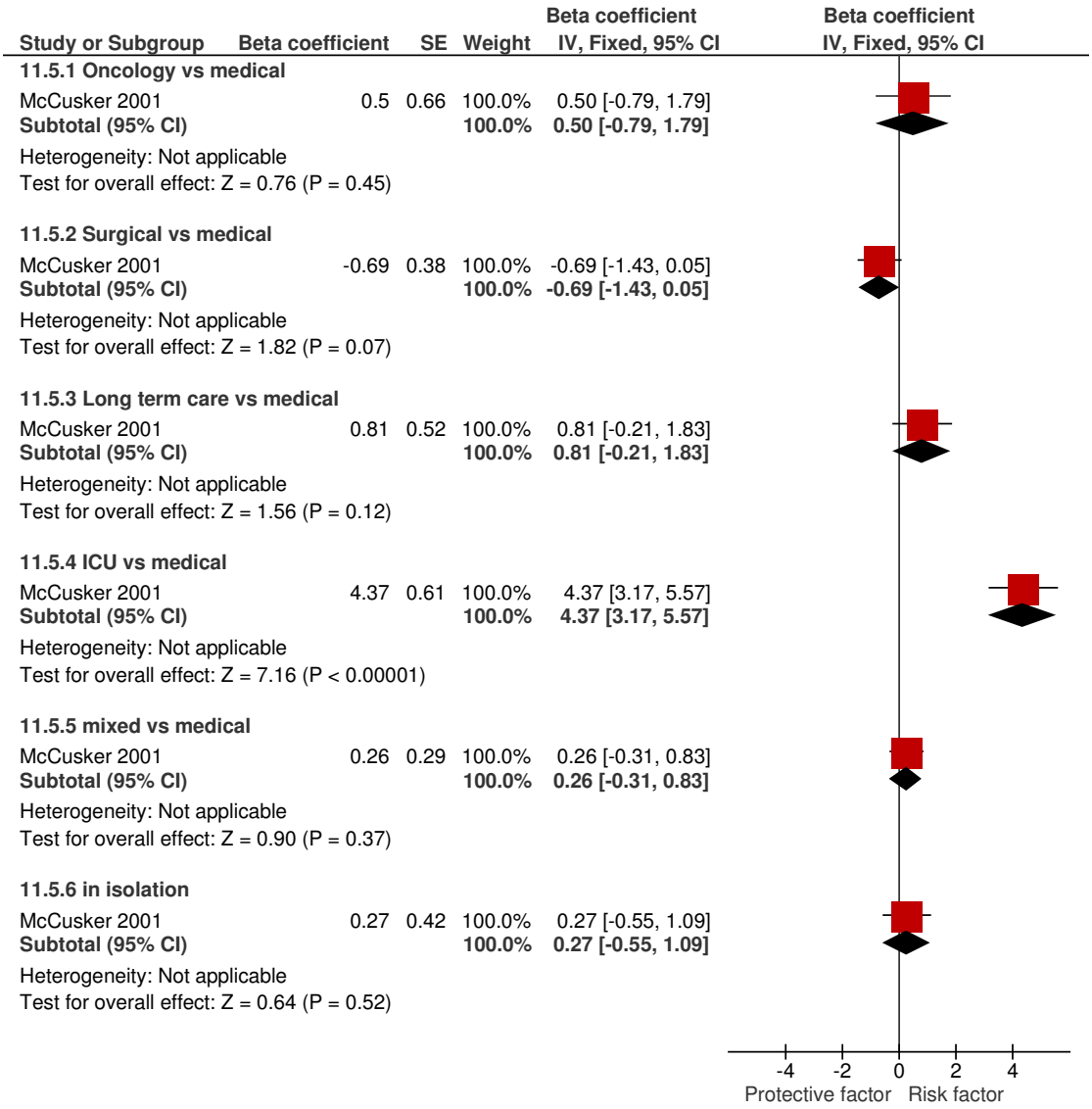


Figure 7.2: age as a risk factor: incidence of delirium

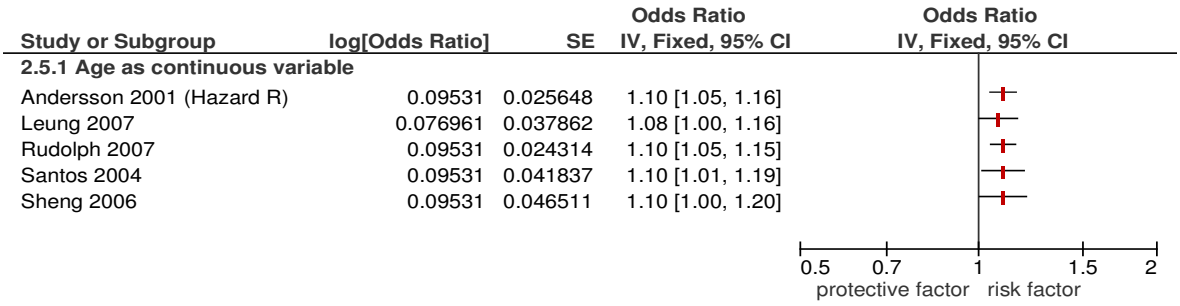


Figure 7.3a: age as a risk factor: incidence of delirium

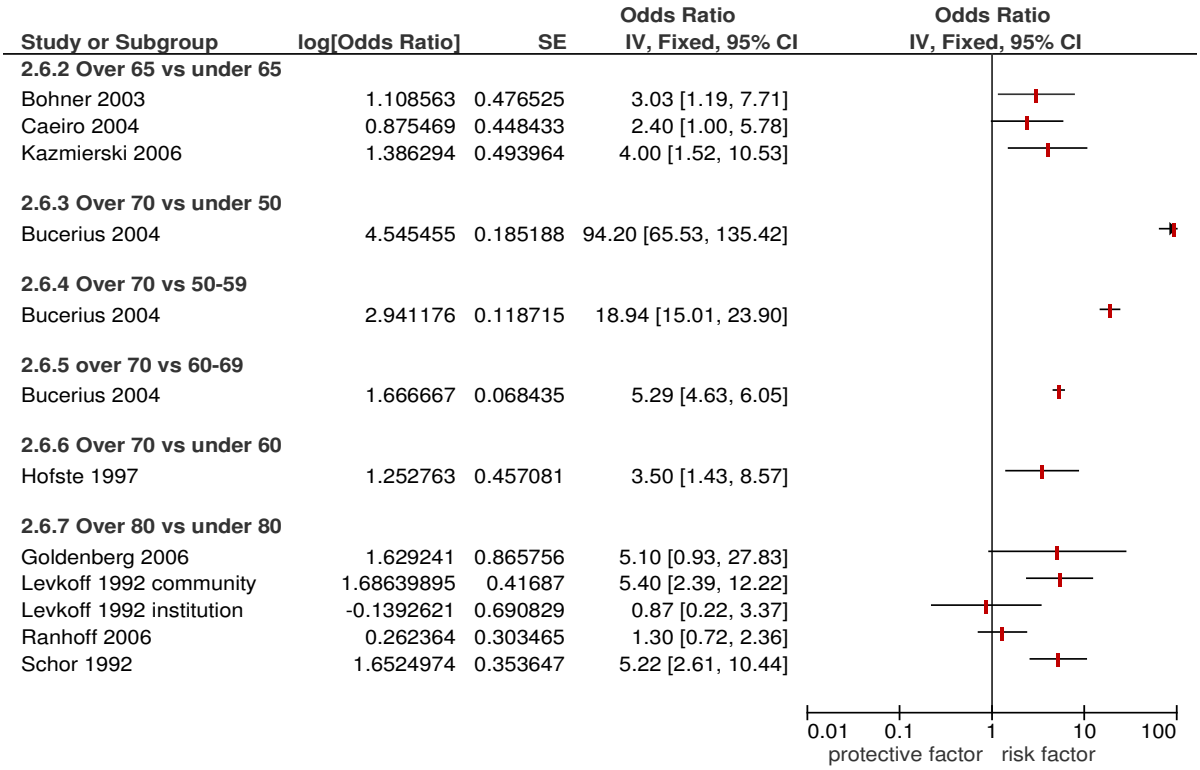


Figure 7.3b: age: incidence of delirium excluding studies with a low quality rating

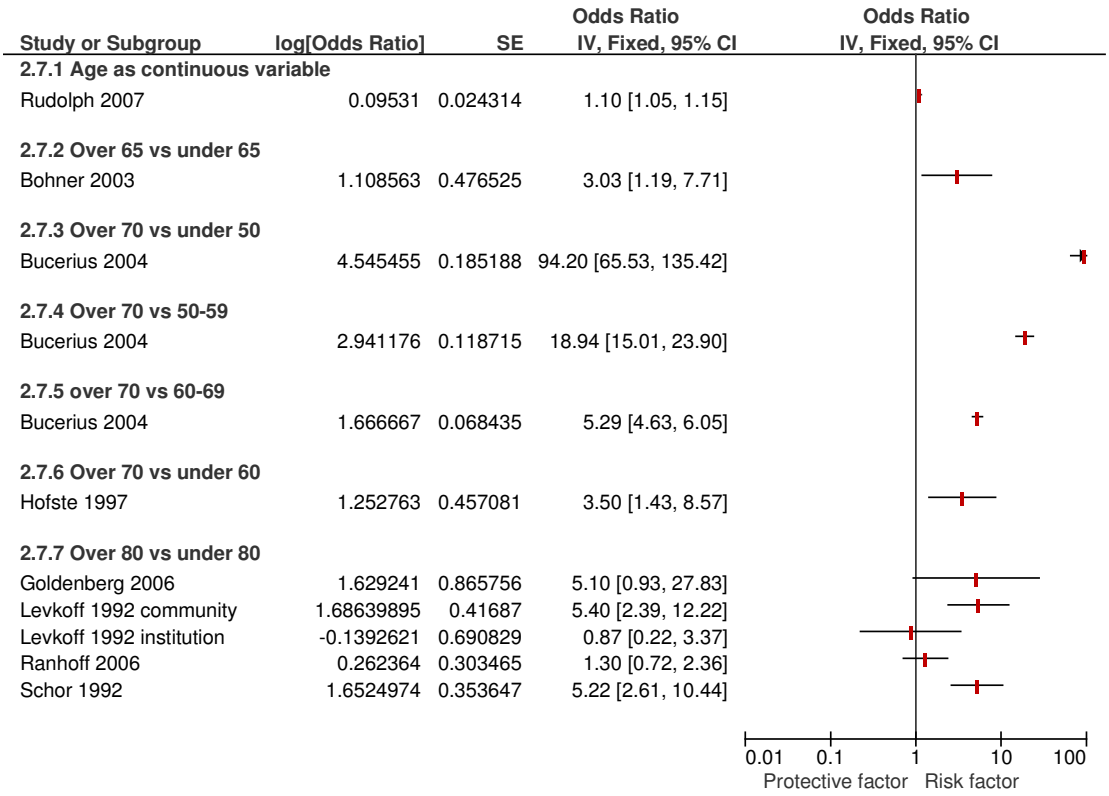


Figure 7.4: age as a risk factor: duration of delirium

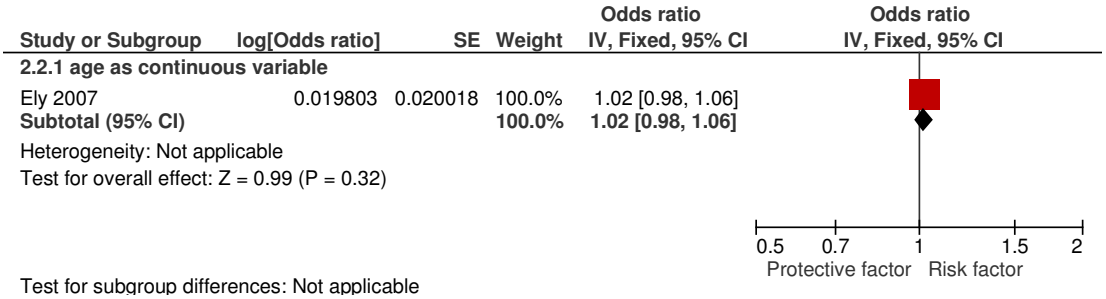


Figure 7.5: patient characteristics as risk factors: severity of delirium

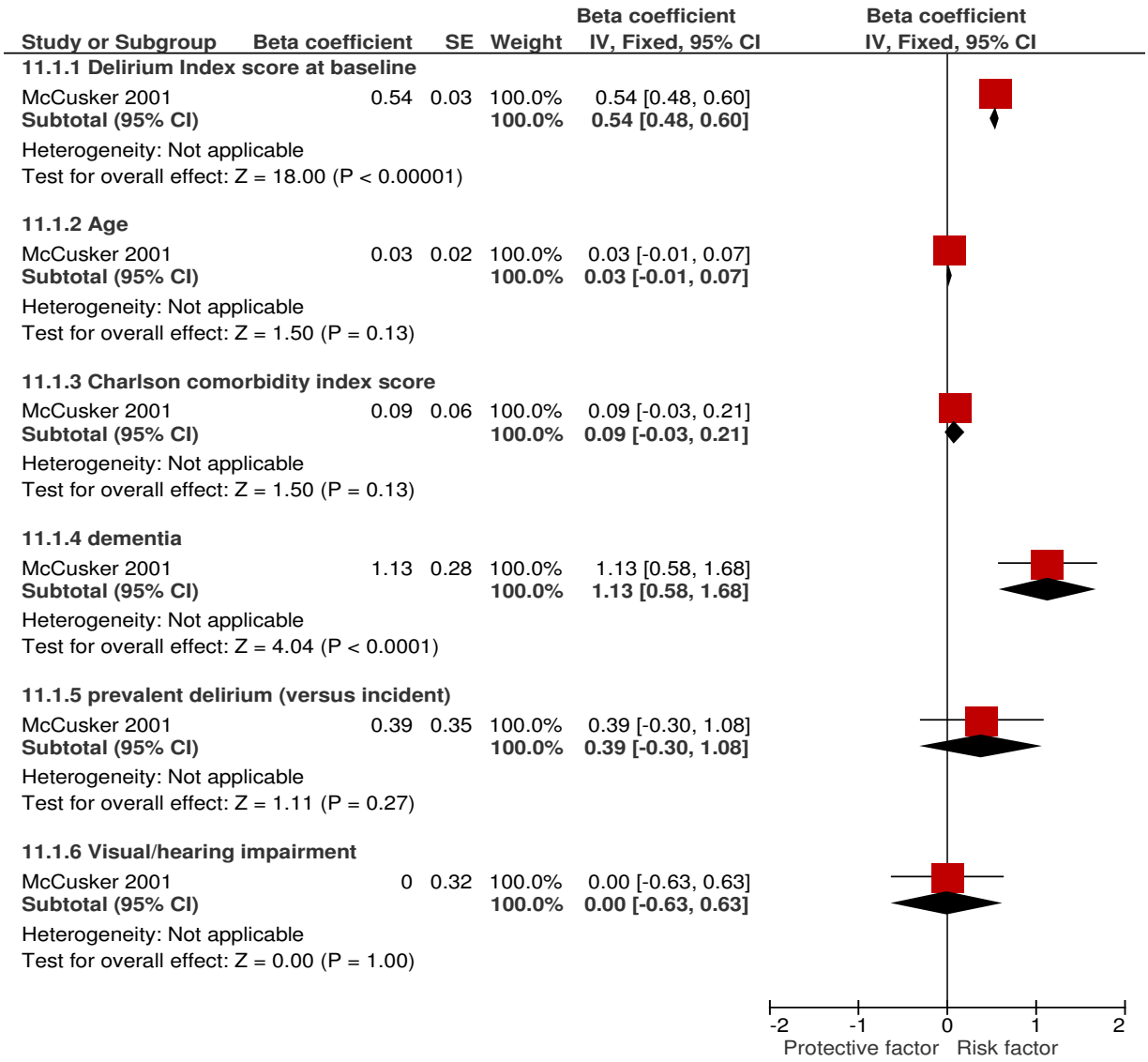


Figure 7.6a: cognitive impairment and/or dementia as a risk factor: incidence of delirium

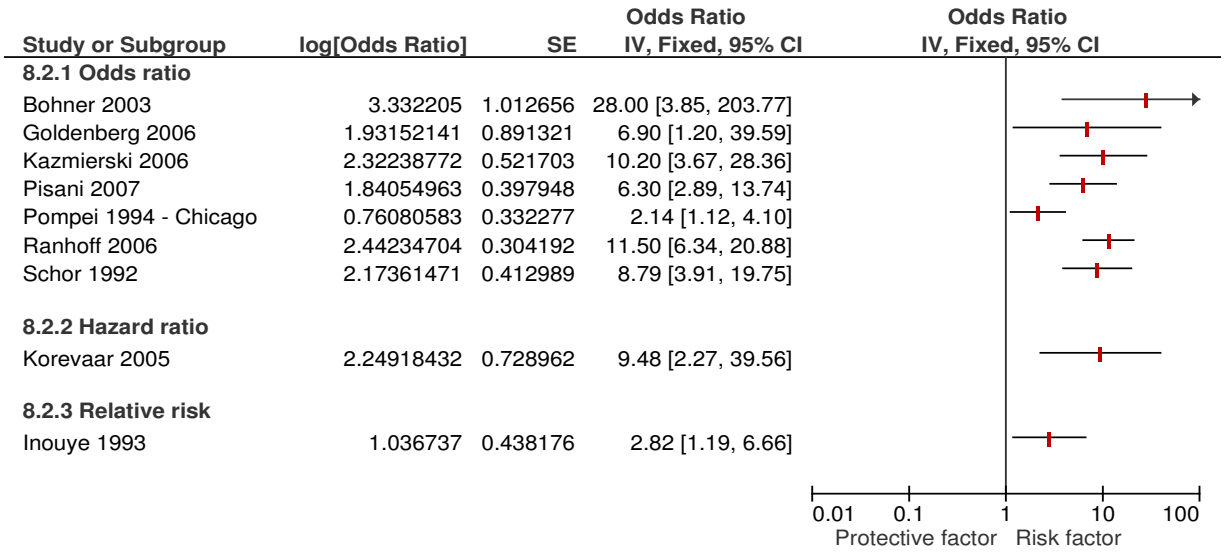


Figure 7.6b: cognitive impairment and/or dementia: incidence of delirium excluding studies with a low quality rating, and also Ranhoff (2006)

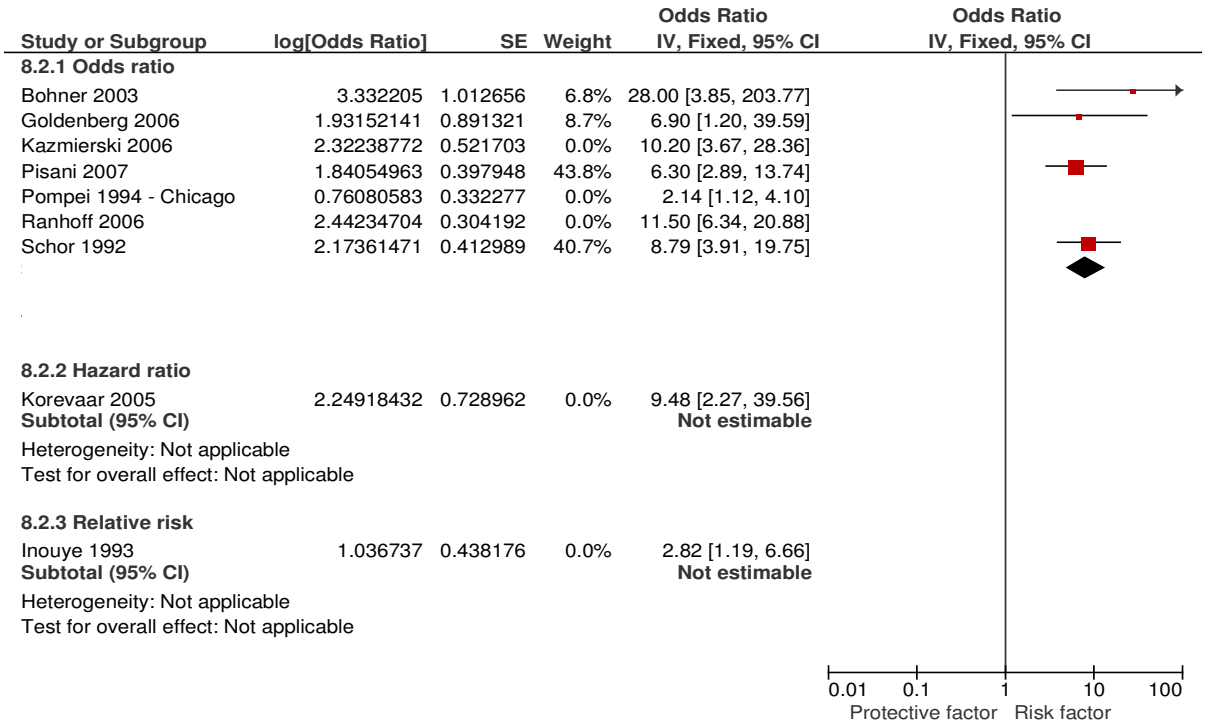


Figure 7.7: cognitive impairment and/or dementia as a risk factor: persistent delirium

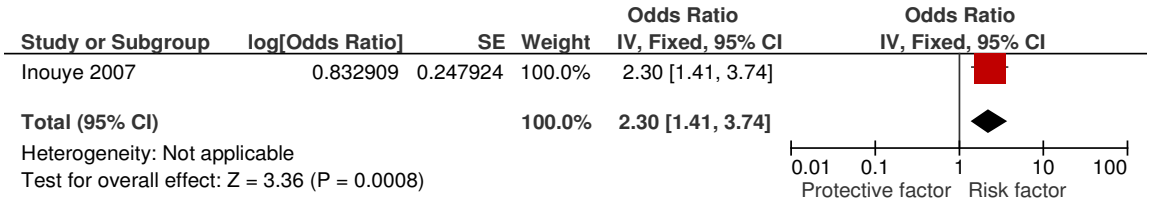


Figure 7.8: impaired vision as a risk factor: incidence of delirium

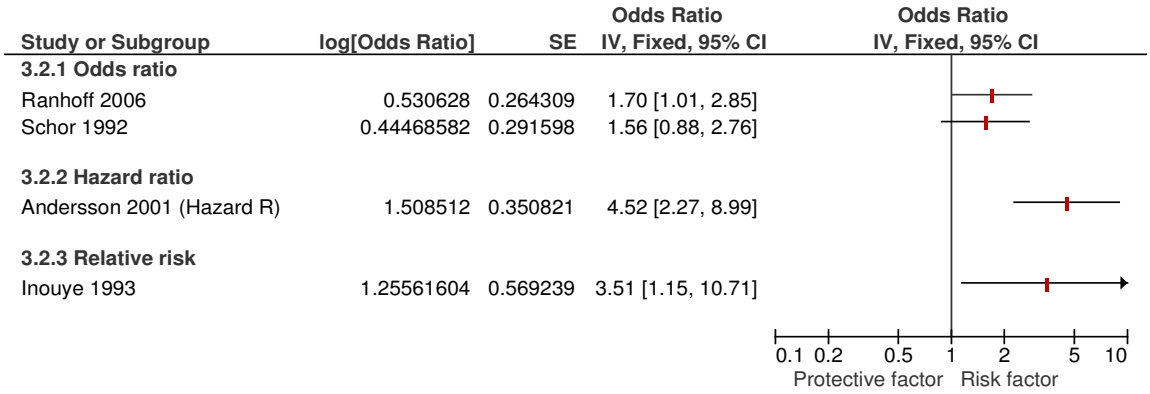


Figure 7.9: impaired vision as a risk factor: persistent delirium

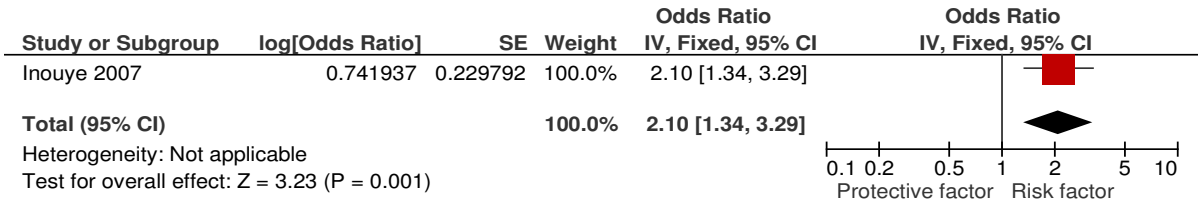


Figure 7.10: polypharmacy: incidence of delirium

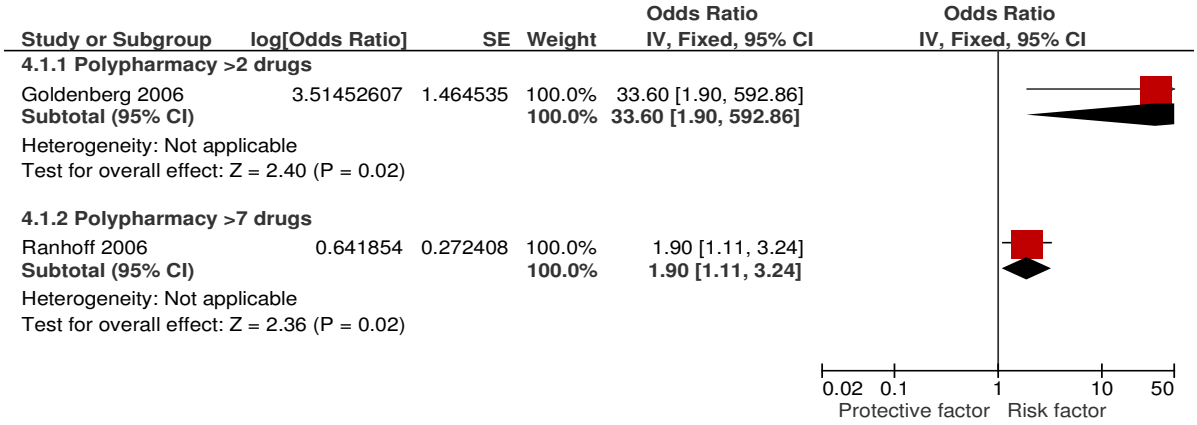


Figure 7.11: dehydration as a risk factor: incidence of delirium

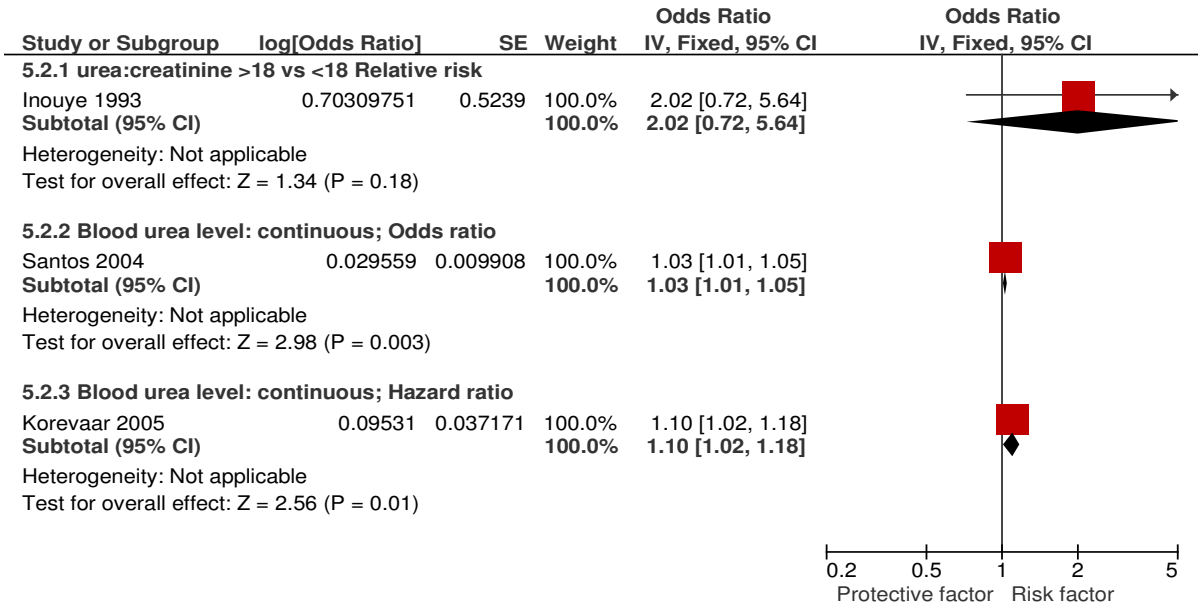


Figure 7.12: illness severity as a risk factor: incidence of delirium

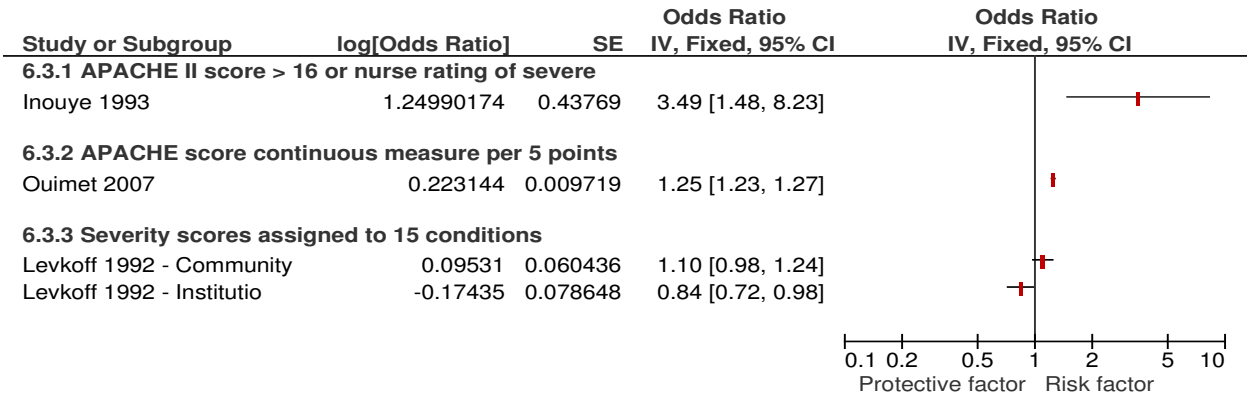


Figure 7.13: illness severity as a risk factor: duration of delirium

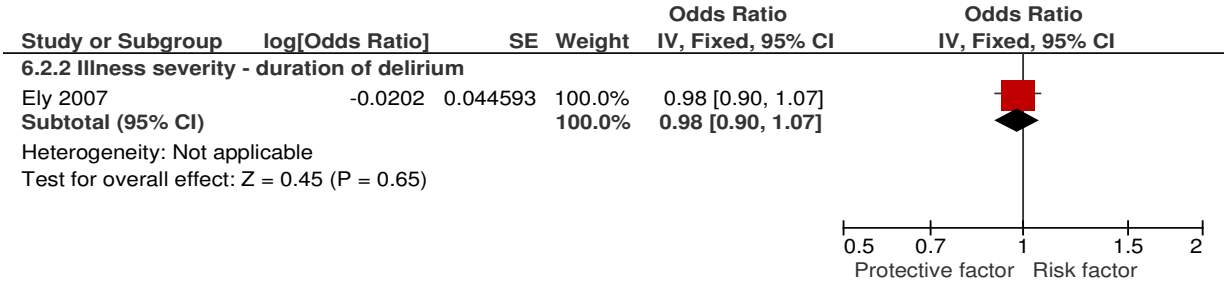


Figure 7.14: comorbidity as a risk factor: incidence of delirium

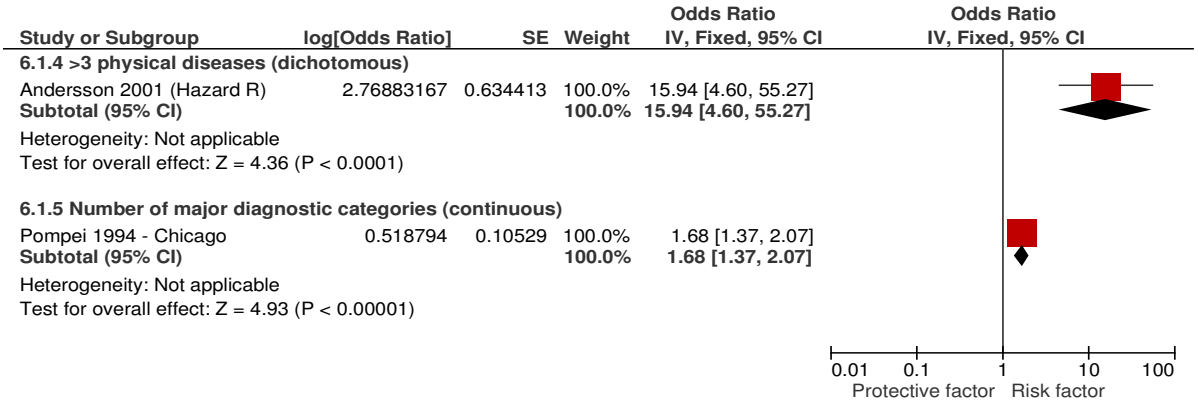


Figure 7.15: comorbidity as a risk factor: persistent delirium

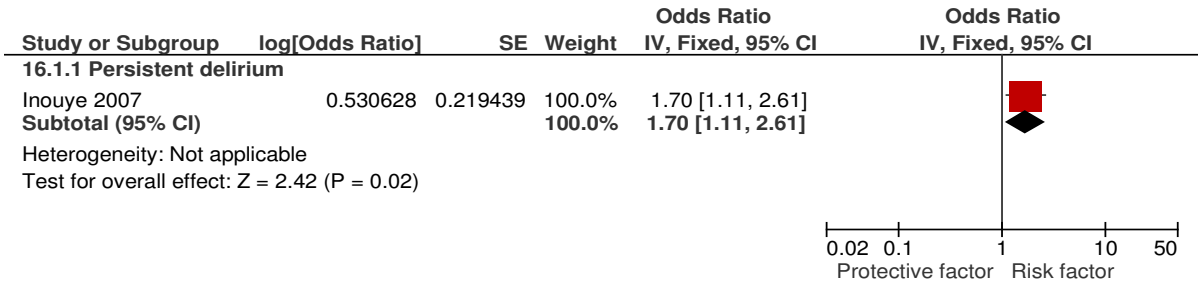


Figure 7.16: sex (male) as a risk factor: incidence of delirium

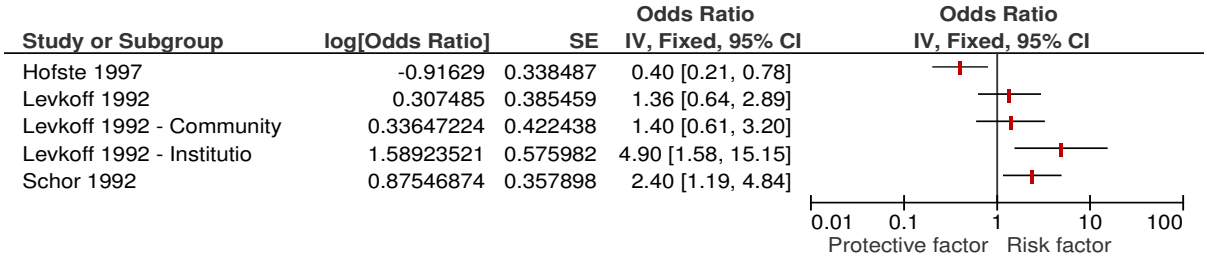


Figure 7.17: electrolyte disturbance as a risk factor: incidence of delirium

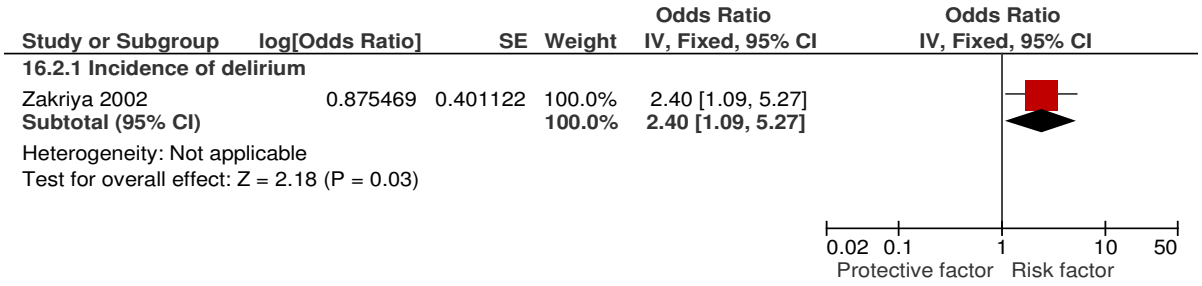


Figure 7.18: depression as a risk factor: incidence of delirium

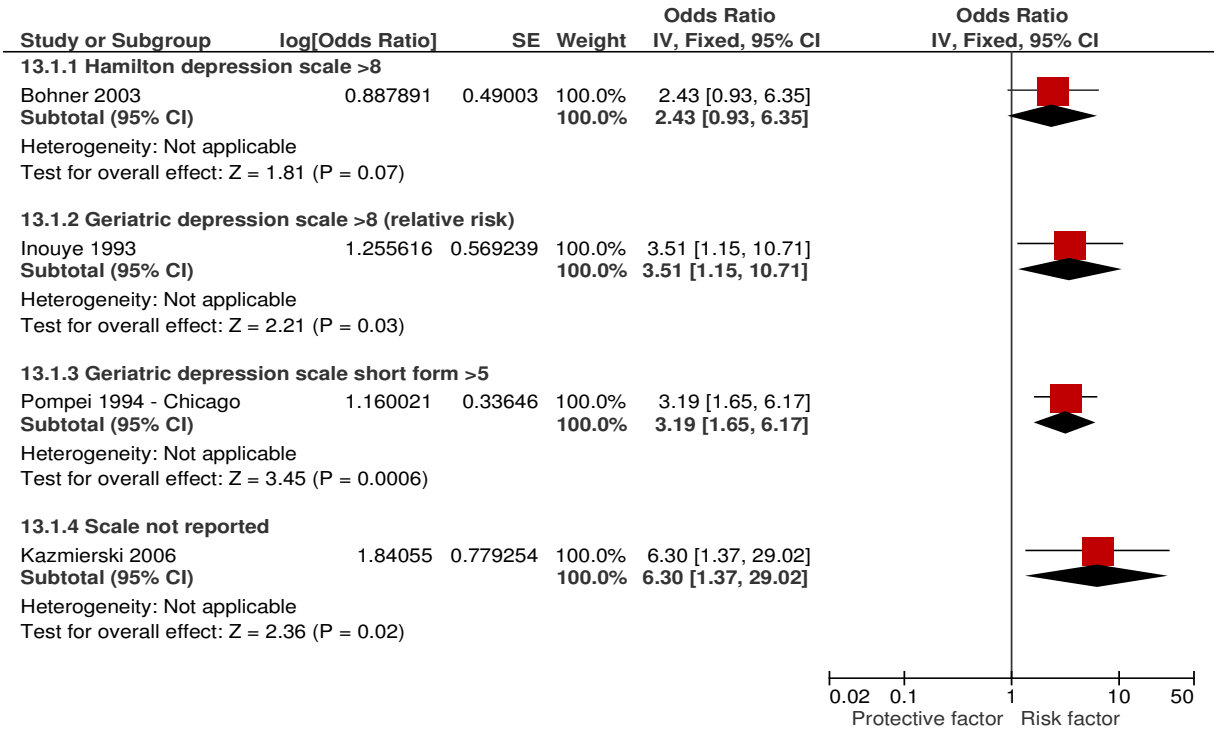


Figure 7.19: infection as a risk factor: incidence of delirium

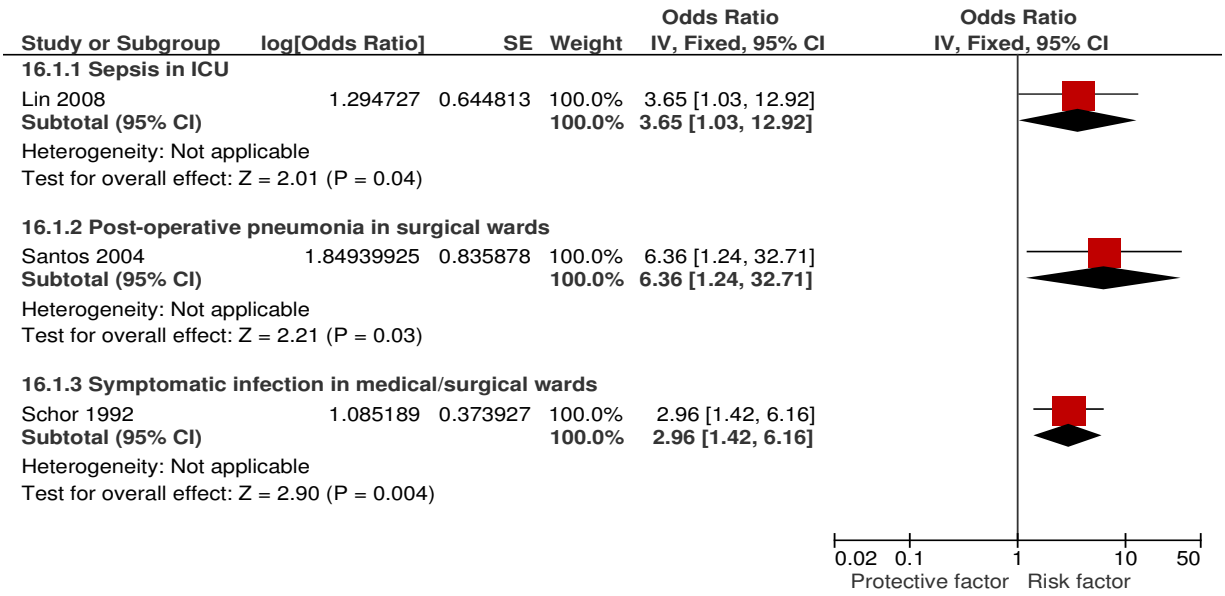


Figure 7.20: infection as a risk factor: duration of delirium

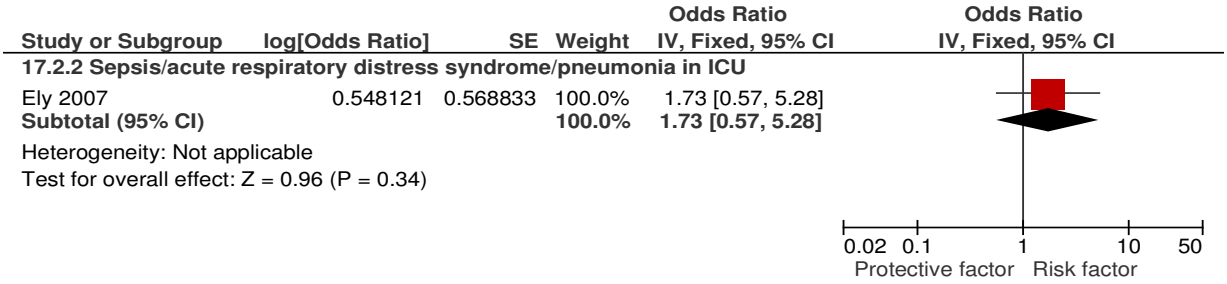


Figure 7.21: fracture on admission as a risk factor

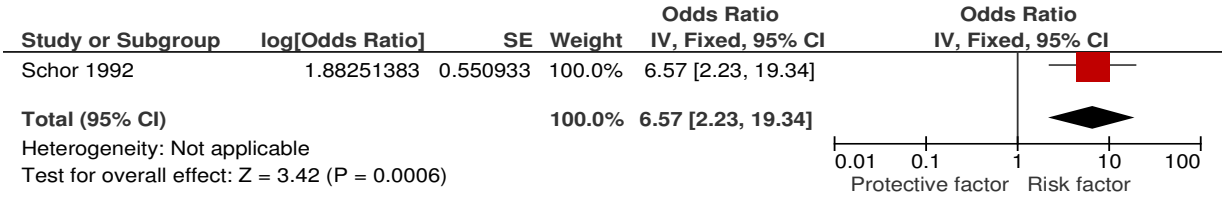


Figure 7.22: environmental risk factors: severity of delirium

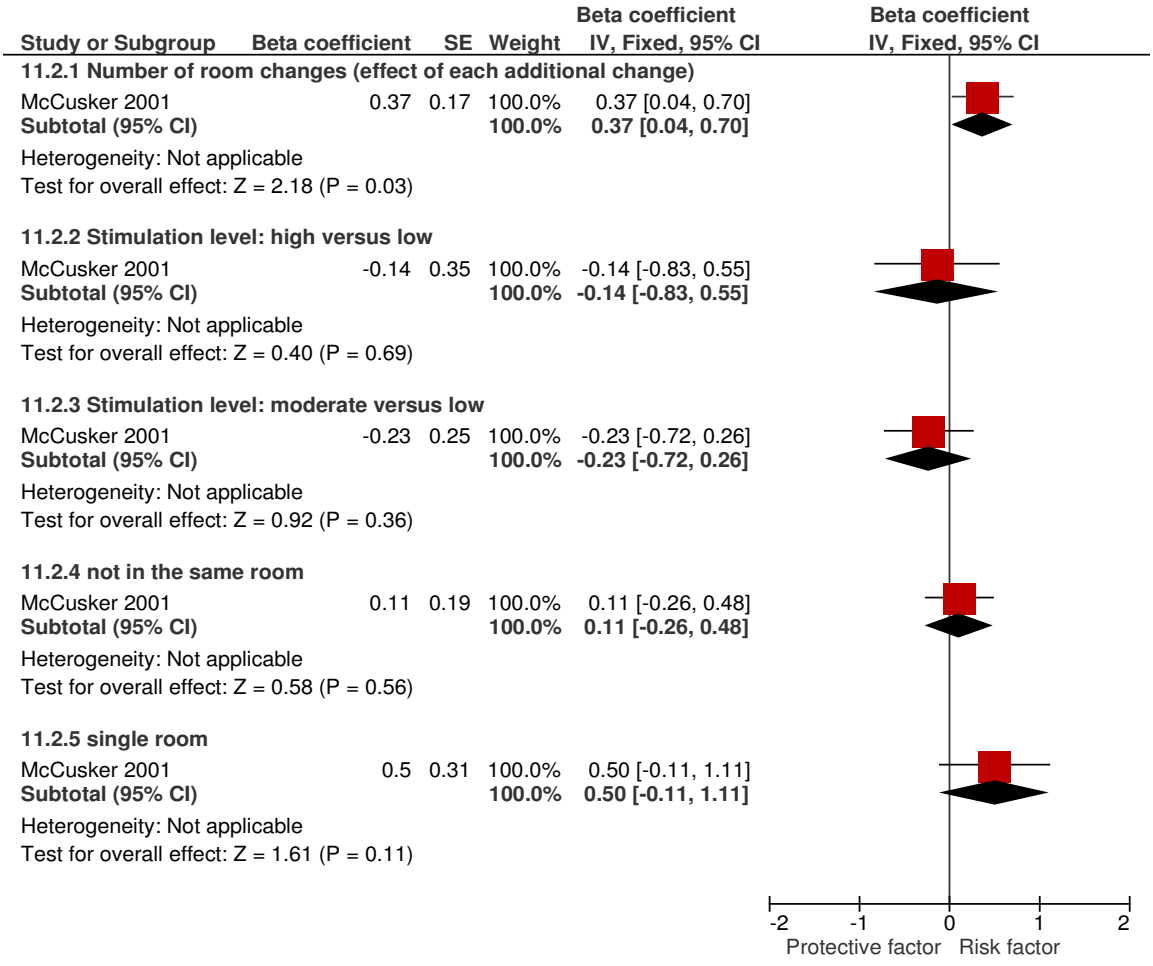
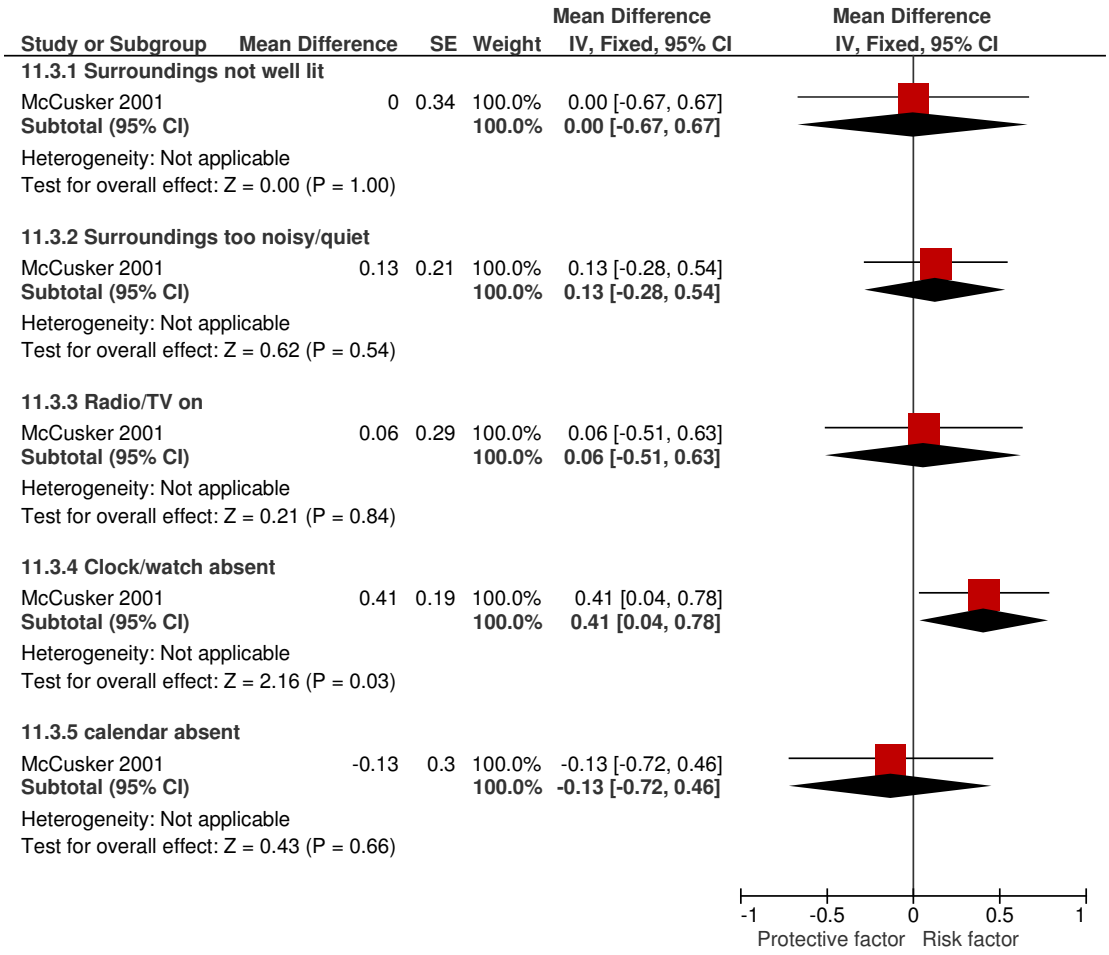


Figure 7.23: environmental risk factors: severity of delirium



NB scale -1 to +1

Figure 7.24: environmental risk factors: severity of delirium

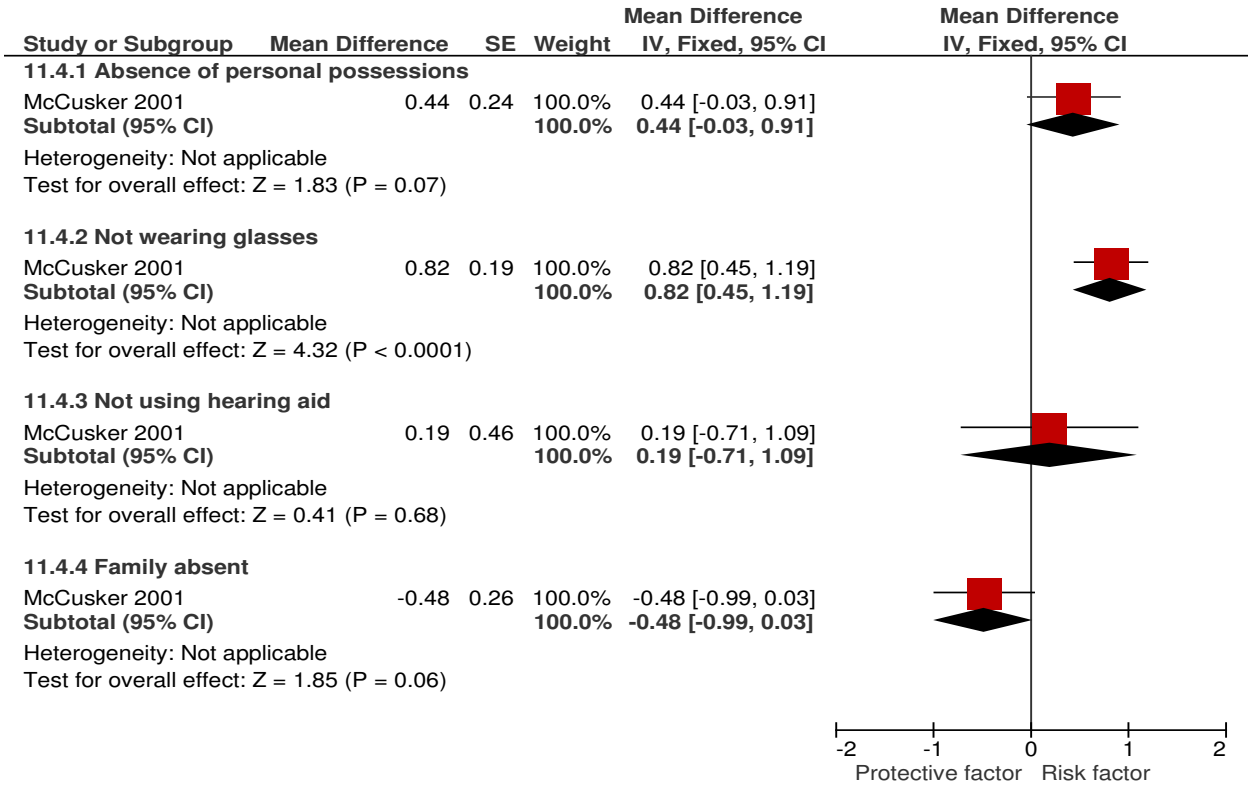


Figure 7.25: cardiac surgery risk factors: incidence of delirium

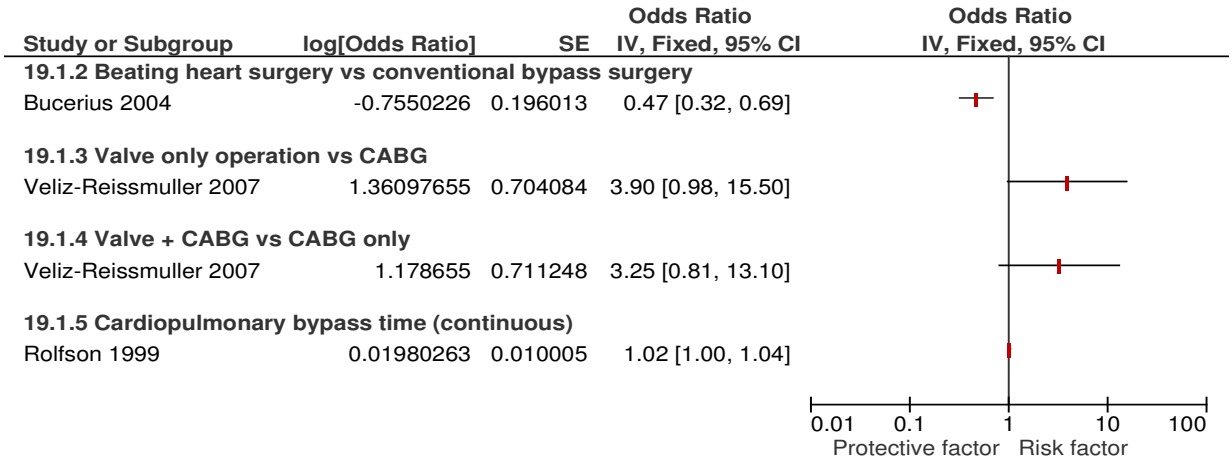


Figure 7.26: type of surgery a risk factor: incidence of delirium

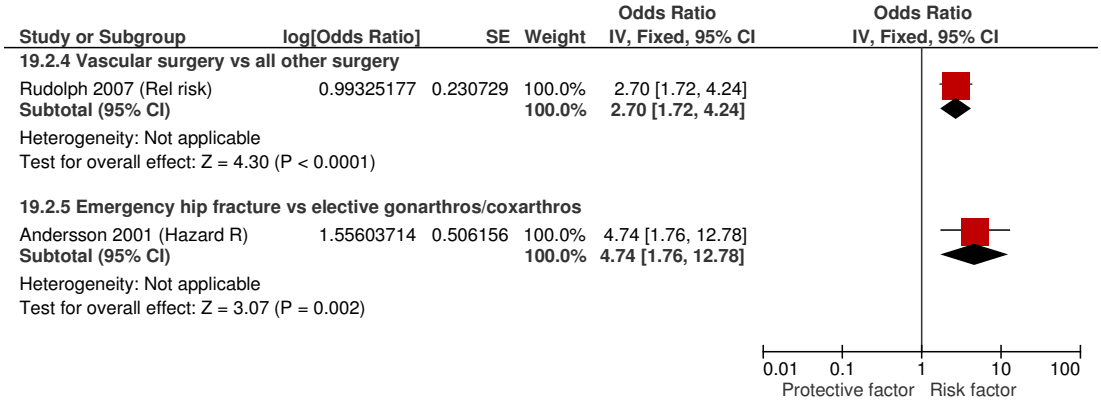


Figure 7.27: iatrogenic intervention as a risk factor: incidence of delirium

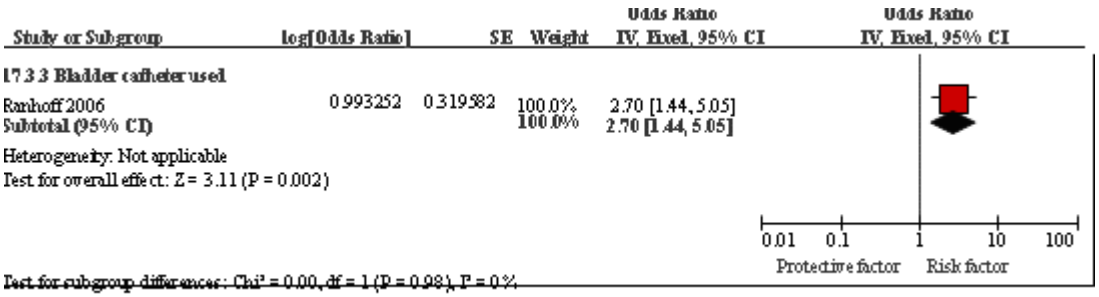


Figure 7.28: physical restraint during delirium: persistent delirium

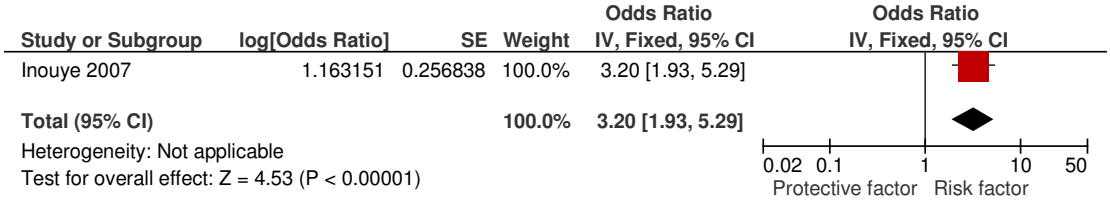
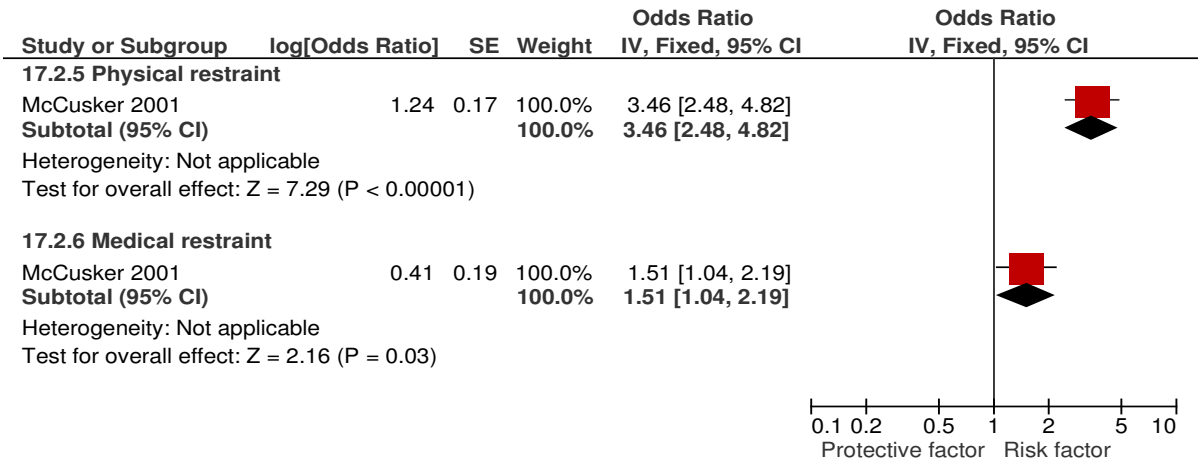


Figure 7.29: physical and medical restraint as a risk factor for the severity of delirium



Risk factors for delirium: pharmacological agents

Figure 8.1: Midazolam as a risk factor for development of delirium

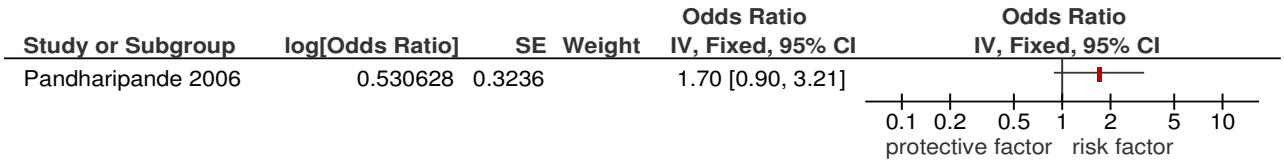


Figure 8.2: lorazepam as a risk factor for development of delirium

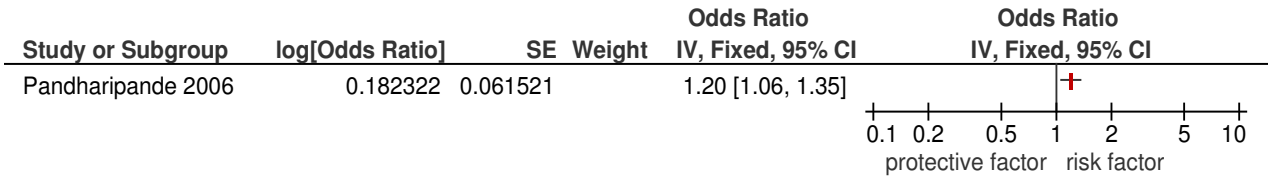


Figure 8.3: benzodiazepines as a risk factor for delirium

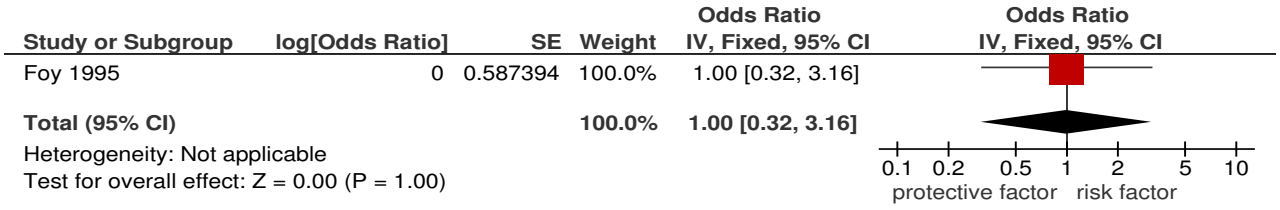
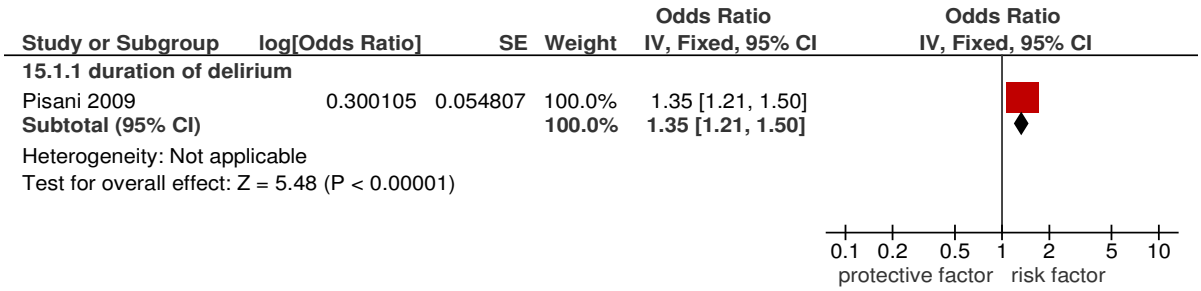


Figure 8.4: Haloperidol as a risk factor for duration of delirium



NB: Scale 0.1 to 10

Figure 8.5: antihistamines with anticholinergic activity

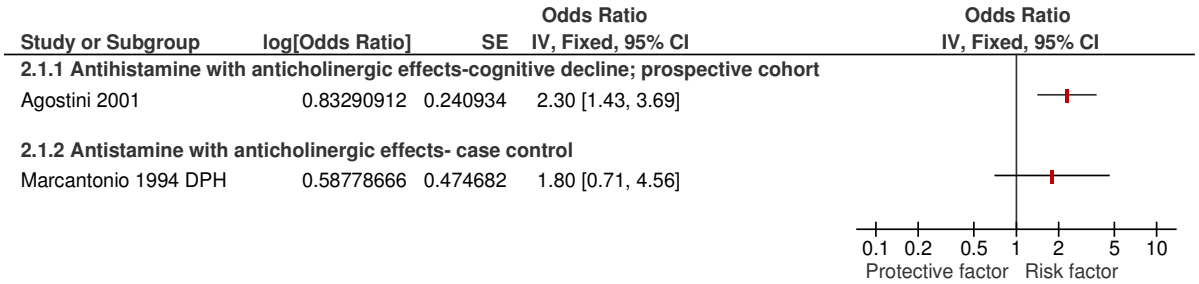


Figure 8.6: exposure to H2 blockers on the incidence of delirium

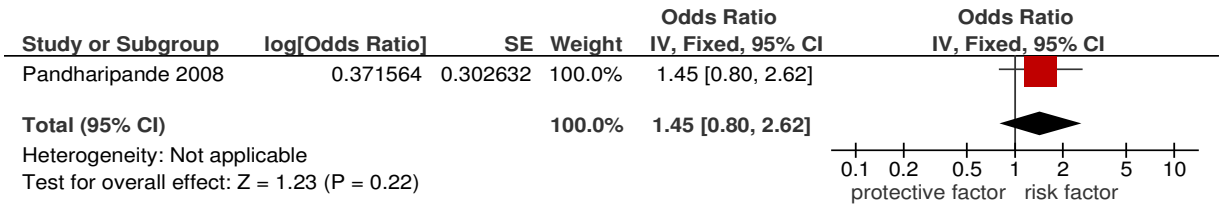
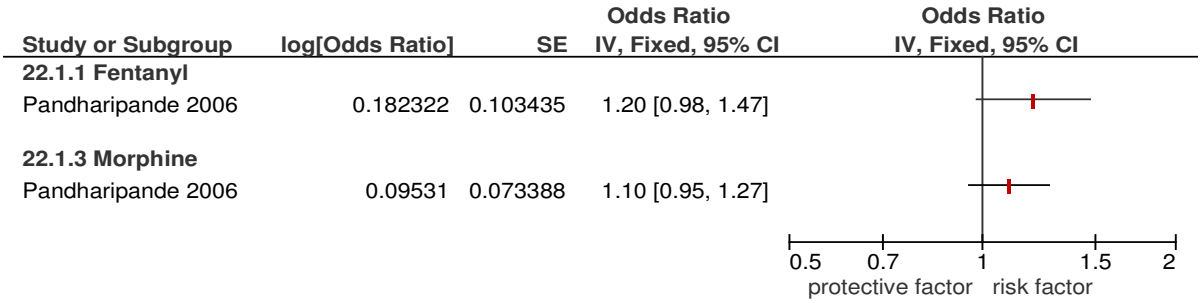


Figure 8.7a: effect of individual opioids on delirium



NB: Scale 0.5 to 2

Figure 8.7b: effect of individual opioids on delirium

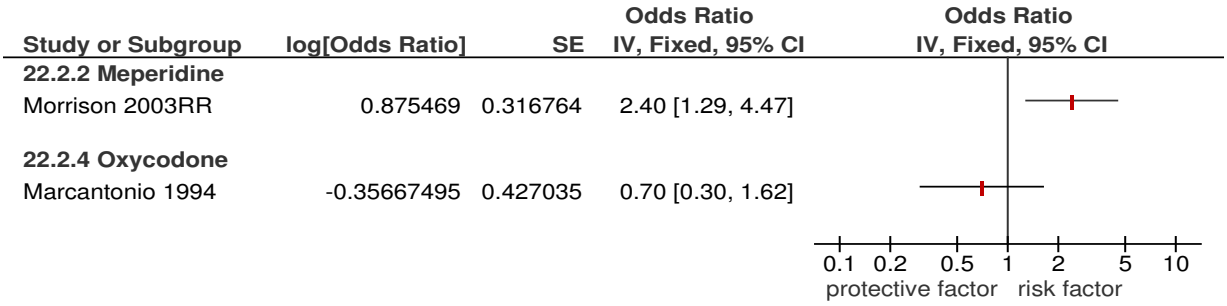


Figure 8.8: effect of opioids on the incidence of delirium

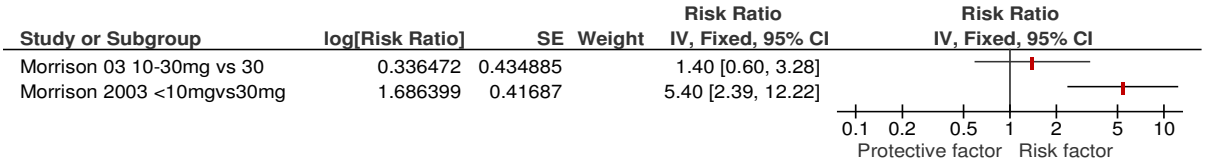


Figure 8.9: effect of intrathecal morphine + PCA morphine versus placebo + PCA morphine

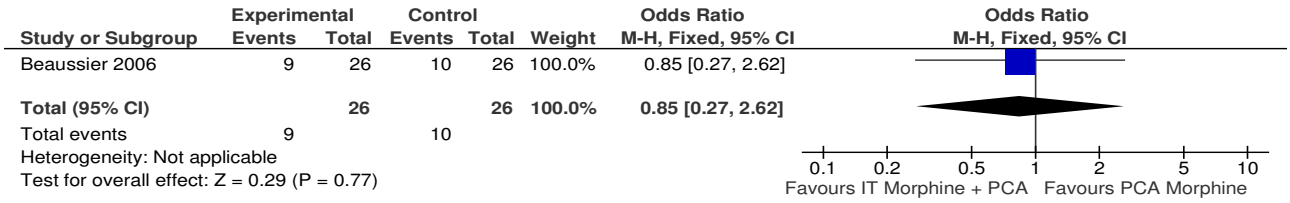


Figure 8.10: effect of PCA opioid analgesics versus oral opioids

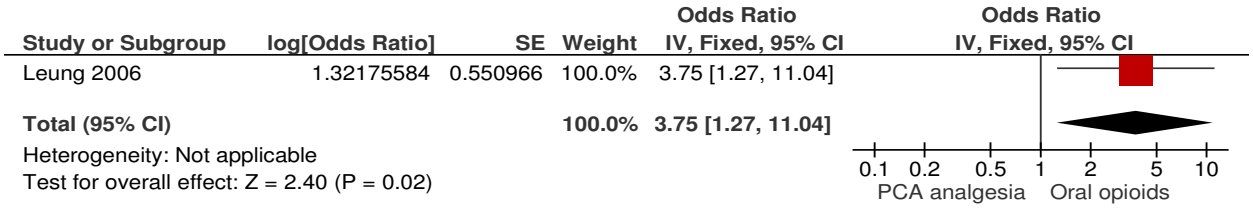


Figure 8.11: effect of general anaesthesia versus regional anaesthesia on delirium

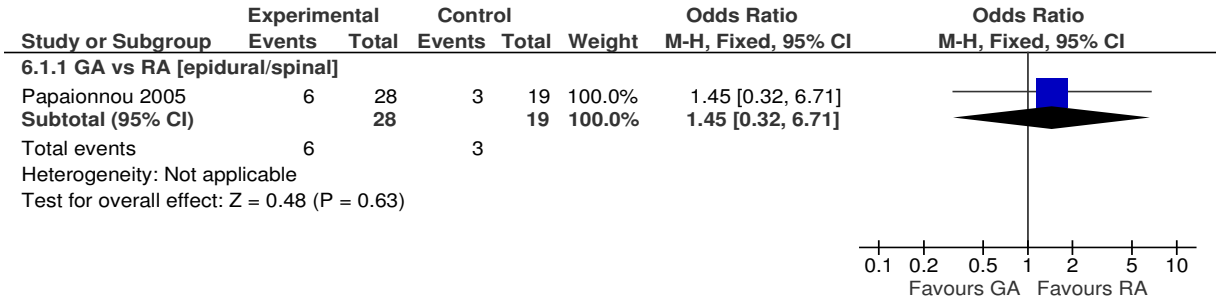


Figure 8.12: effect of N_2O plus O_2 versus O_2 on delirium

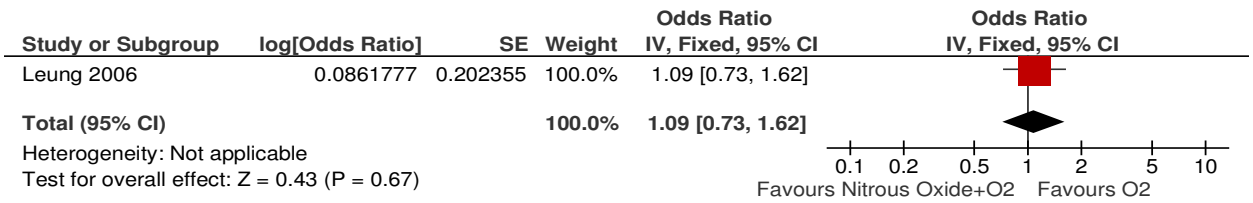
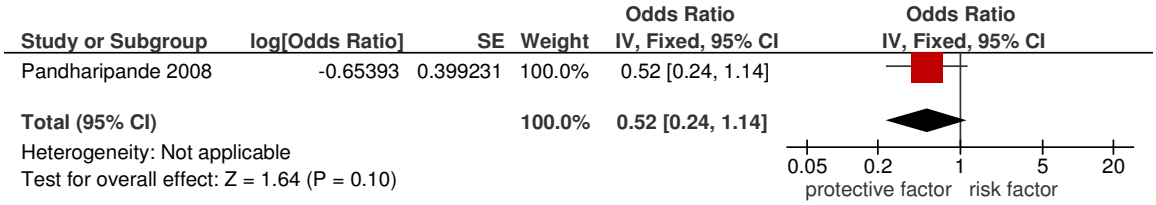
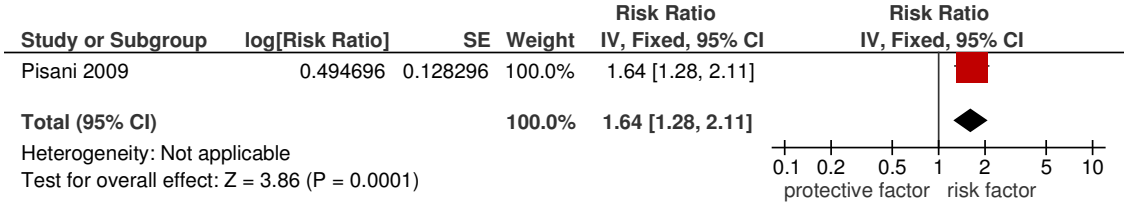


Figure 8.13: effect of anaesthetics on delirium



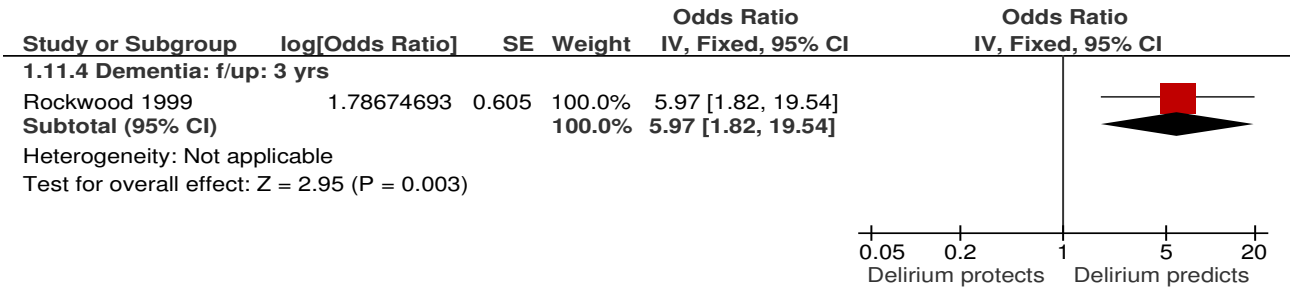
NB: Scale 0.05 to 20

Figure 8.14: effect of benzodiazepines or opioids on the duration of delirium



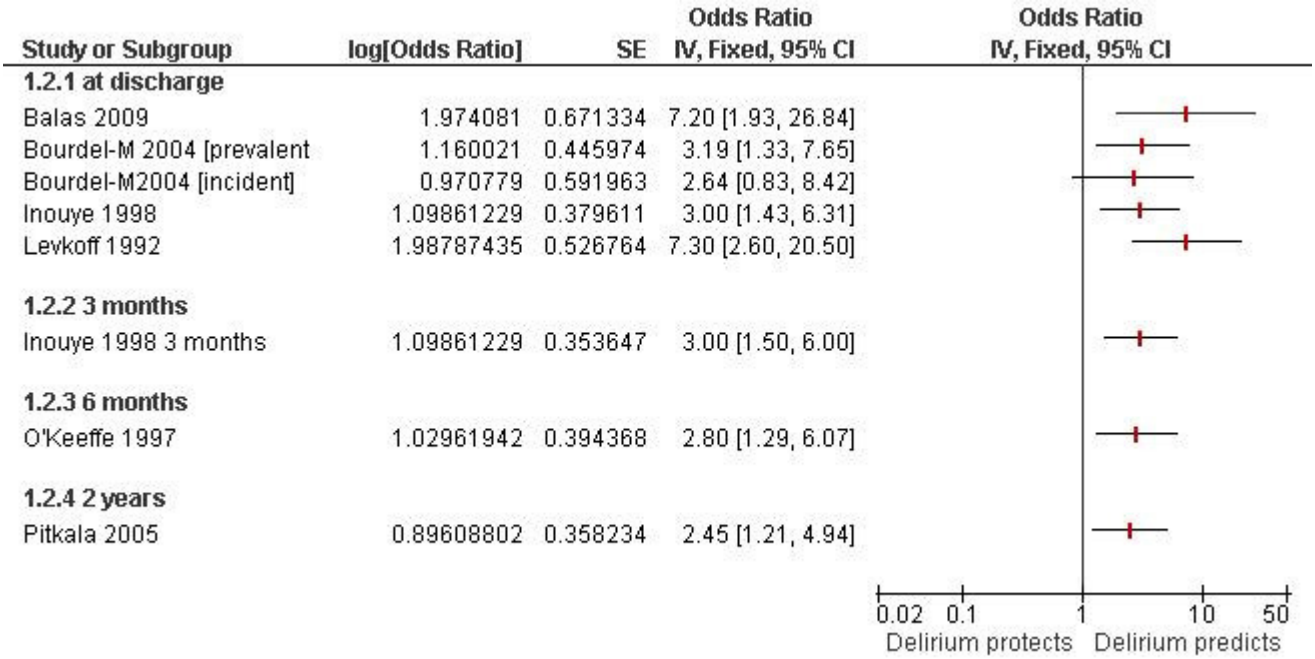
Consequences of delirium

Figure 9.1: dementia as a consequence of delirium



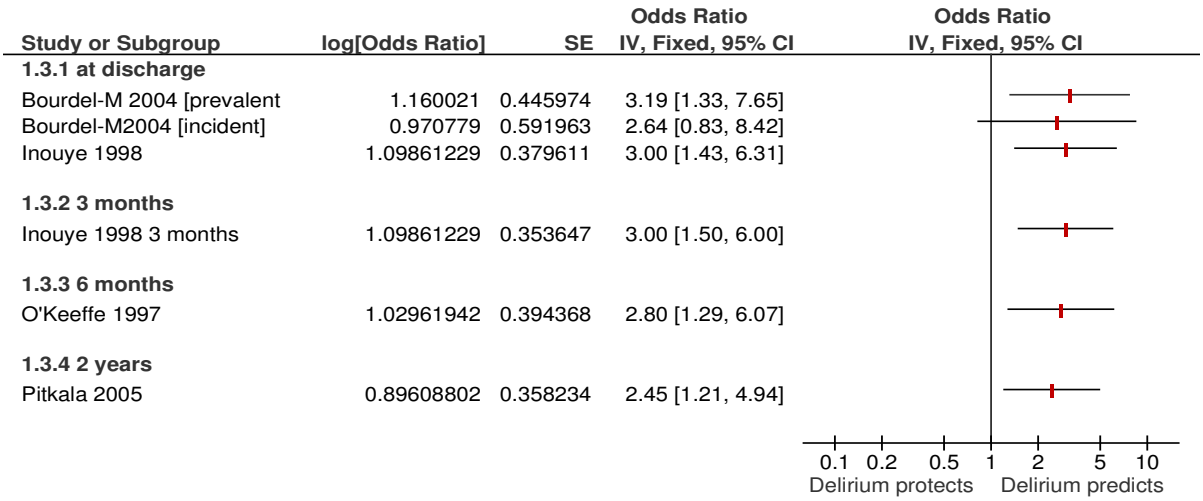
NB: Scale 0.05 to 20

Figure 9.2a: new admission to institution as a consequence of delirium



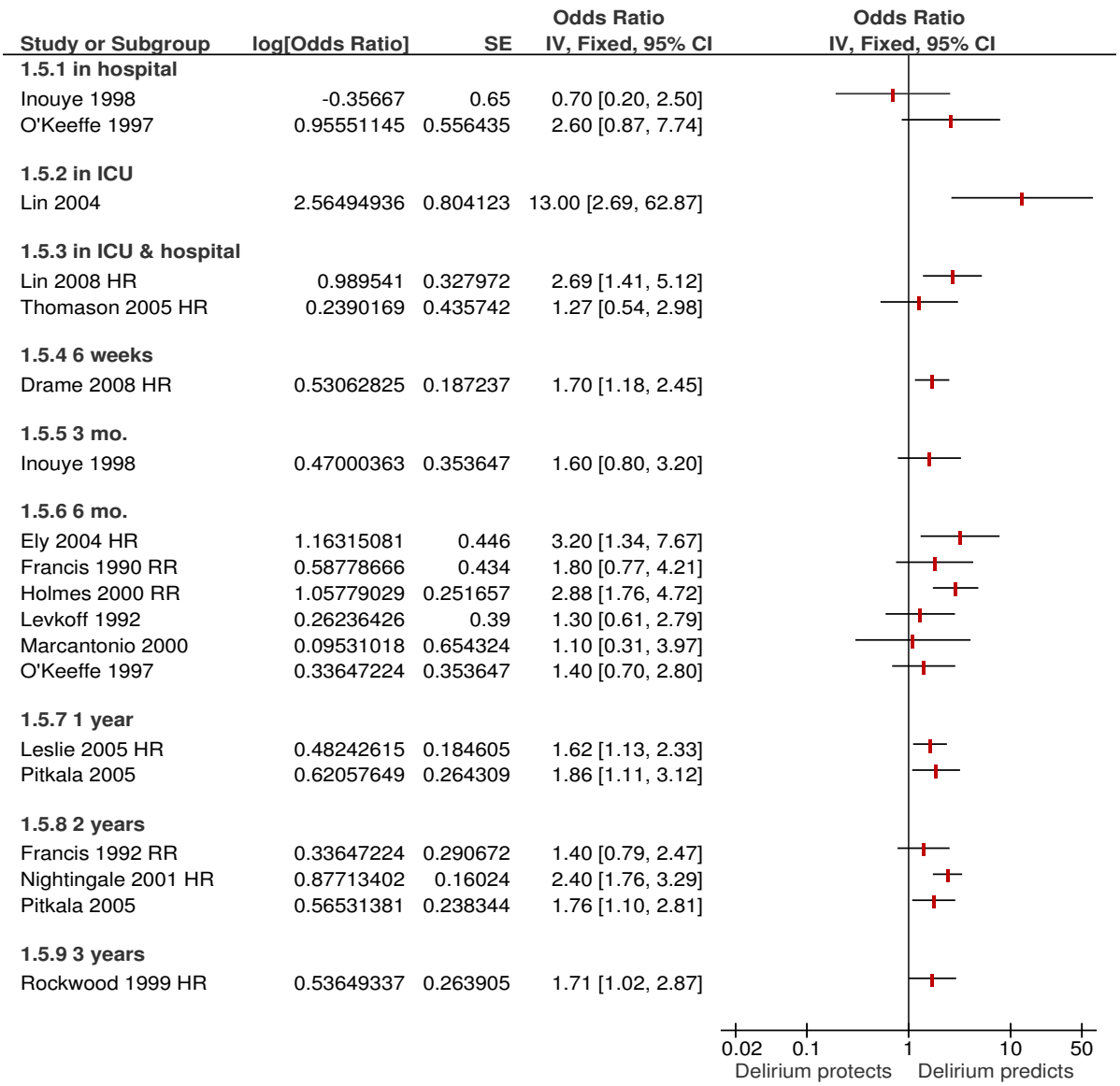
NB: Scale 0.05 to 20

Figure 9.2b: new admission to institution [moderate quality studies]



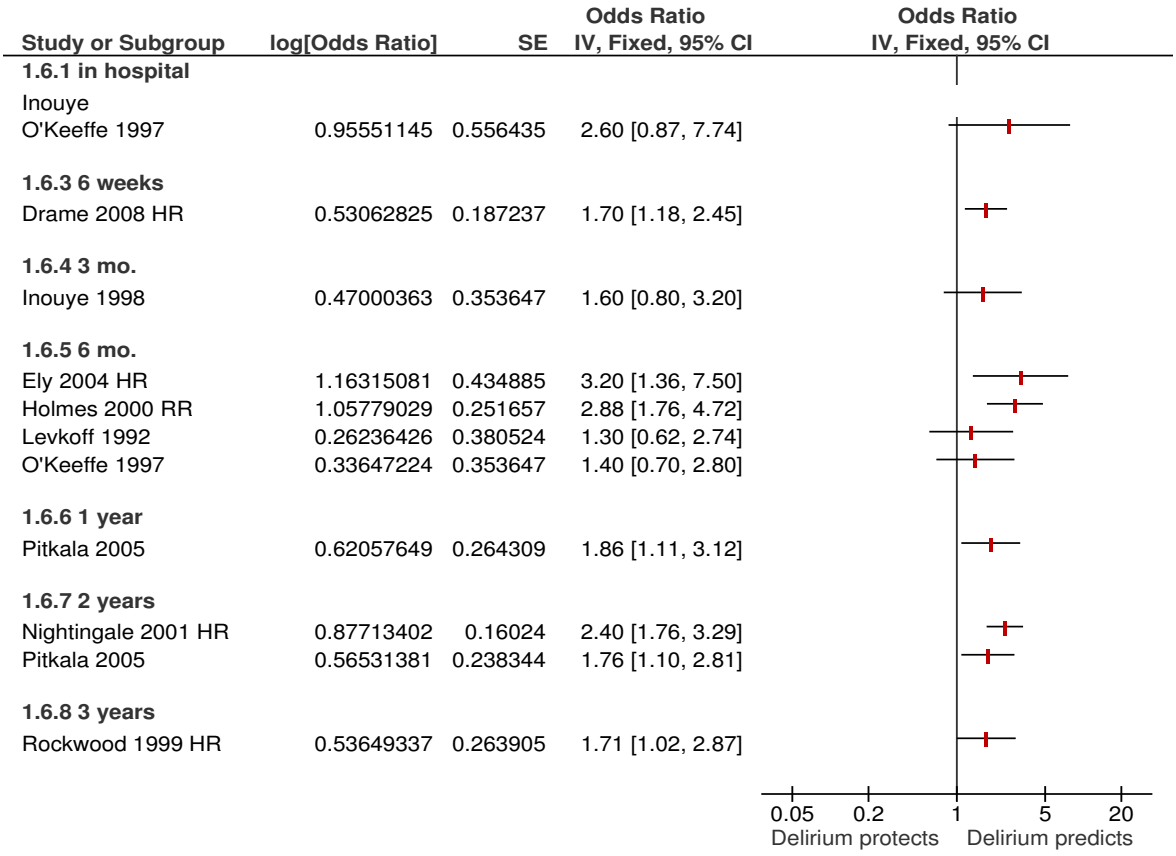
NB: Scale 0.1 to 10

Figure 9.3a: mortality as a consequence of delirium



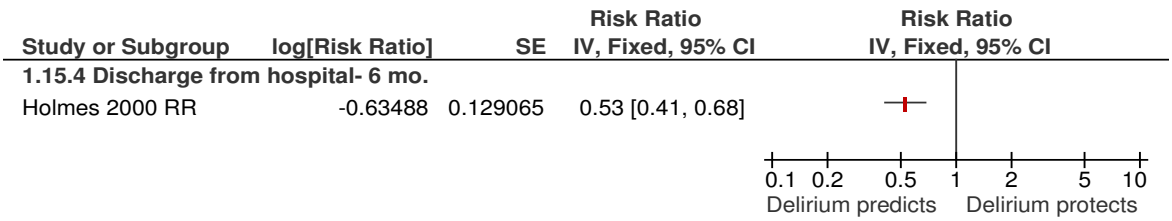
NB: Scale 0.02 to 50

Figure 9.3b: mortality as a consequence of delirium; high and moderate quality studies and restricting to the UK hospital study



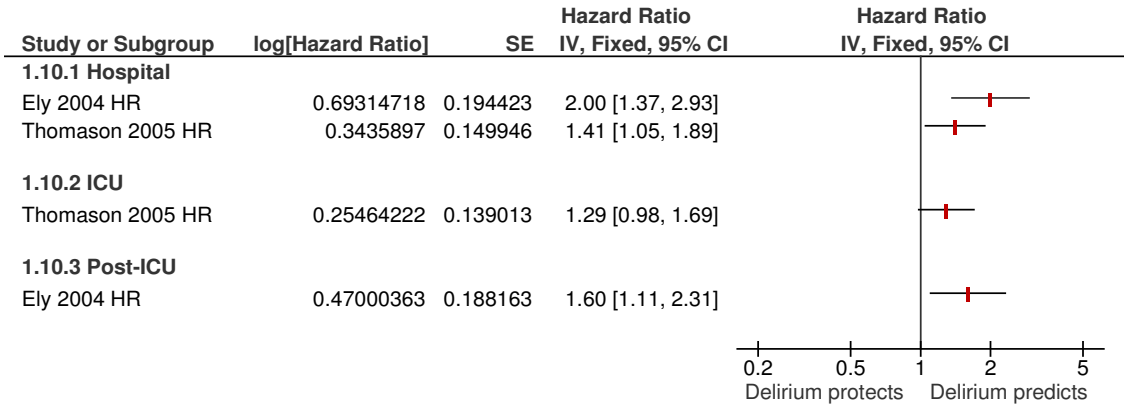
NB: Scale 0.05 to 20

Figure 9.4a: length of stay (discharge from hospital) as a consequence of delirium



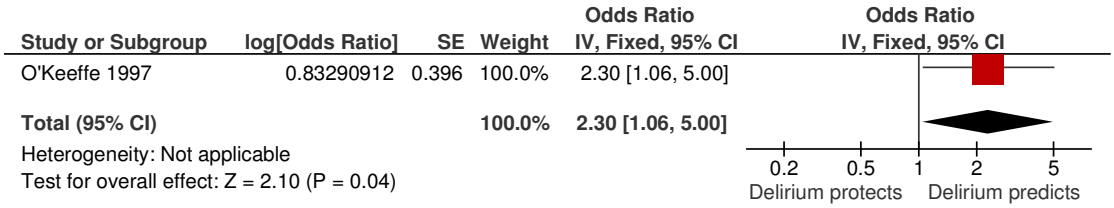
NB: Scale 0.1 to 10

Figure 9.4b: length of stay as a consequence of delirium



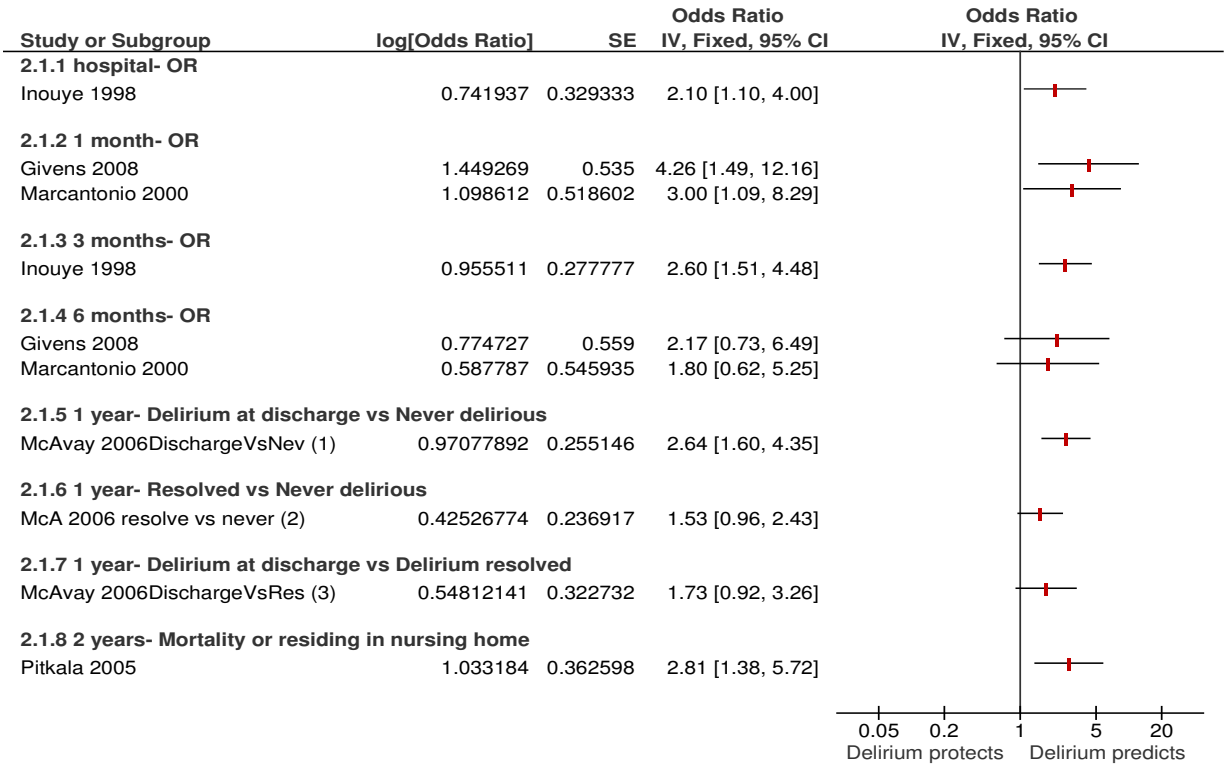
NB: Scale 0.2 to 5

Figure 9.5: hospital acquired complications as a consequence of delirium



NB: Scale 0.2 to 5

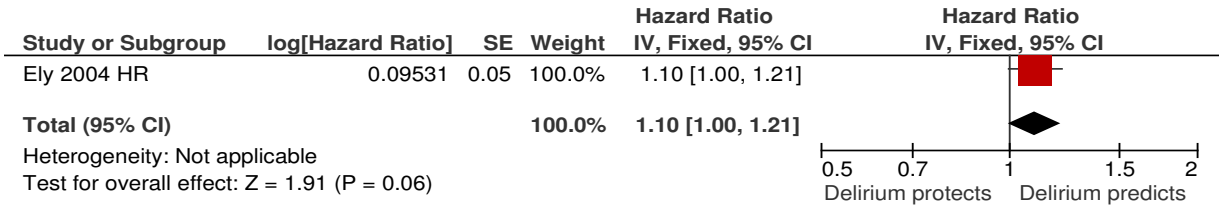
Figure 9.6: mortality or new admission to institution as a consequence of delirium



(1) HR
(2) HR
(3) HR

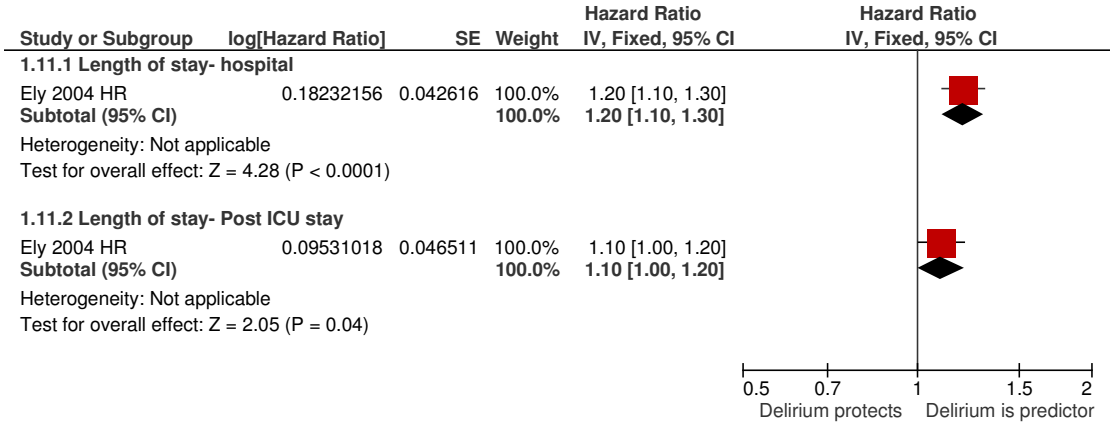
NB: Scale 0.05 to 20

Figure 9.7: mortality as a consequence of increased duration of delirium



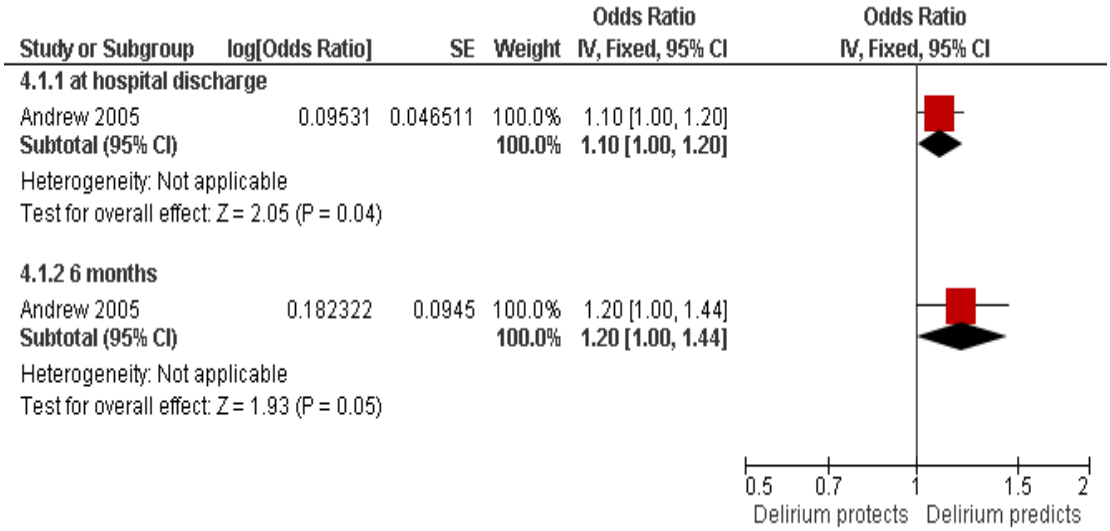
NB: Scale 0.5 to 2

Figure 9.8: length of stay as a consequence of increased duration of delirium



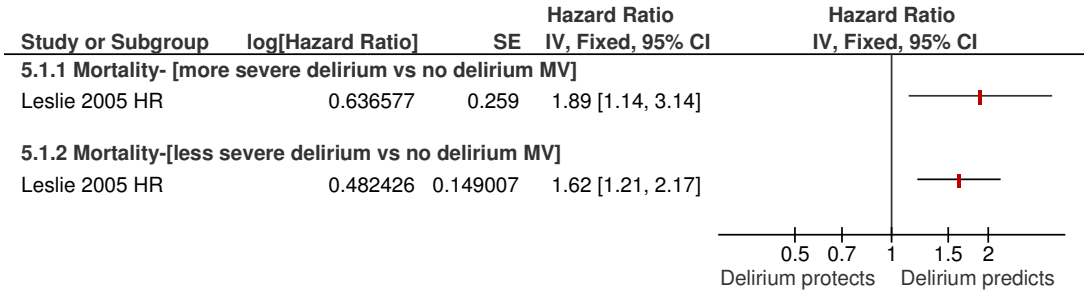
NB: Scale 0.5 to 2

Figure 9.9: mortality or functional decline as a consequence of increased duration of delirium



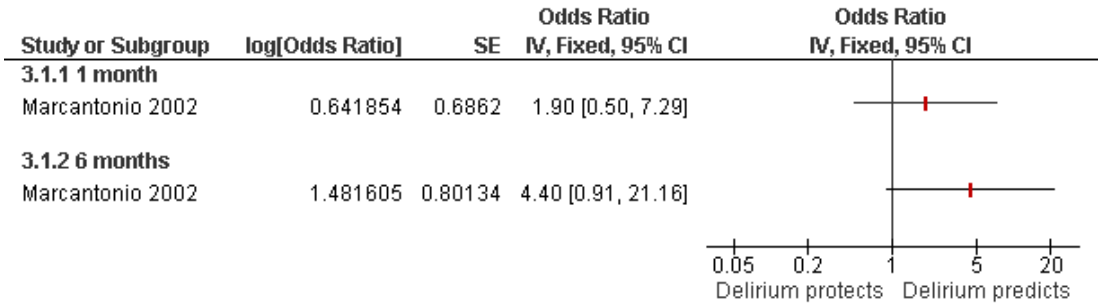
NB: Scale 0.5 to 2

Figure 9.10: mortality (at 1 year) as a consequence of delirium (severity)



NB: Scale 0.5 to 2

Figure 9.11: mortality or new admission to institution (at 1 month and 6 months) as a consequence of delirium severity



NB: Scale 0.05 to 20

Prevention of delirium: non-pharmacological

HYDRATION FOR THE PREVENTION OF DELIRIUM (LONG-TERM CARE SETTING)

Figure 10.1: acute confusion.

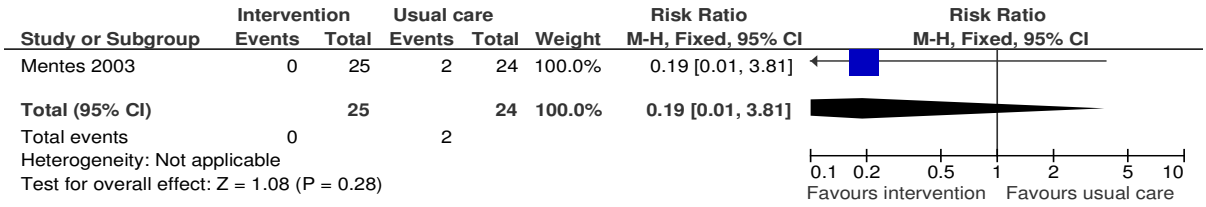
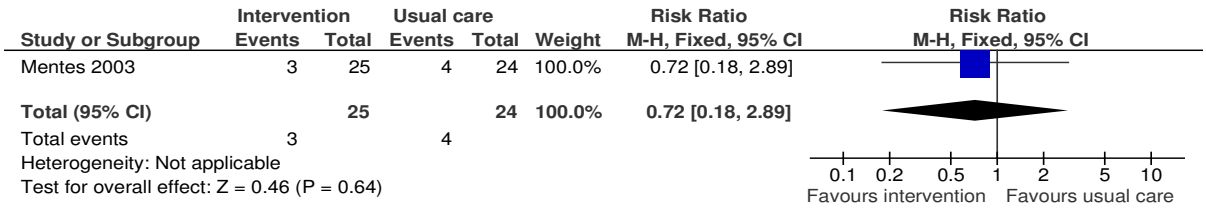
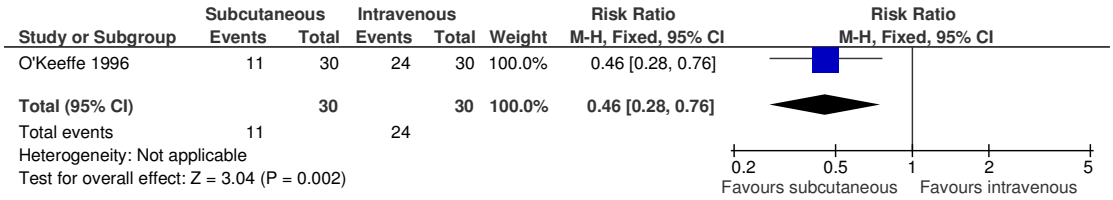


Figure 10.2: hydration-linked events.



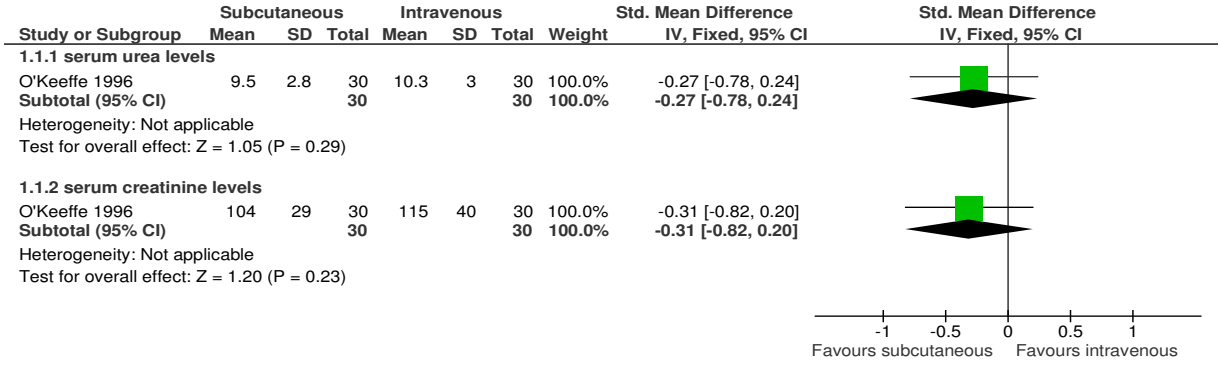
HYDRATION FOR THE PREVENTION OF DELIRIUM (HOSPITAL SETTING

Figure 10.3: agitation



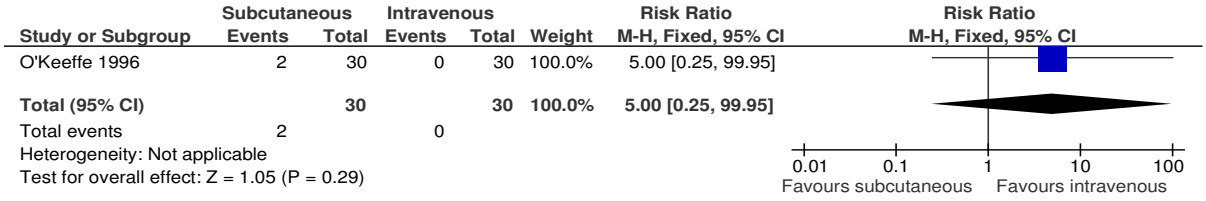
NB: Scale 0.2 to 5

Figure 10.4: serum levels



NB: Scale -1 to 1

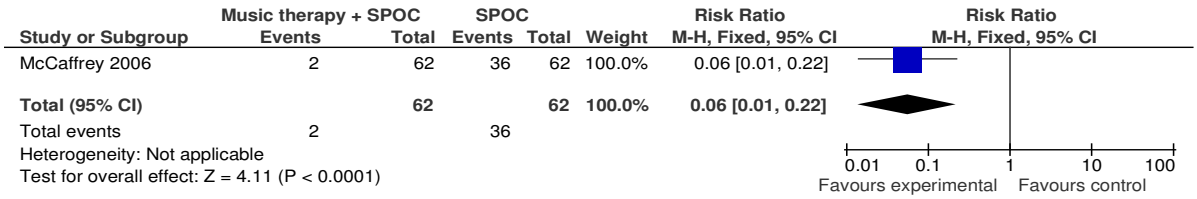
Figure 10.5: local oedema



NB: Scale 0.01 to 100

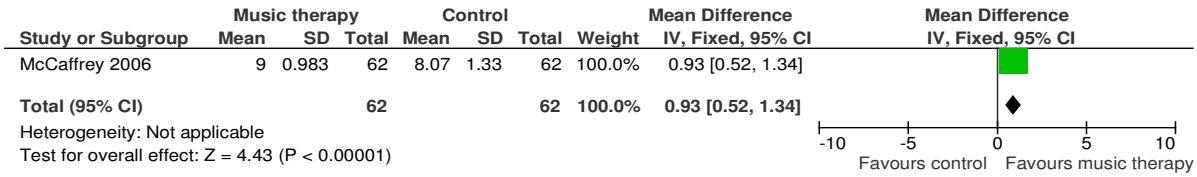
MUSIC THERAPY FOR THE PREVENTION OF DELIRIUM (HOSPITAL SETTING)

Figure 10.6: number of patients with delirium



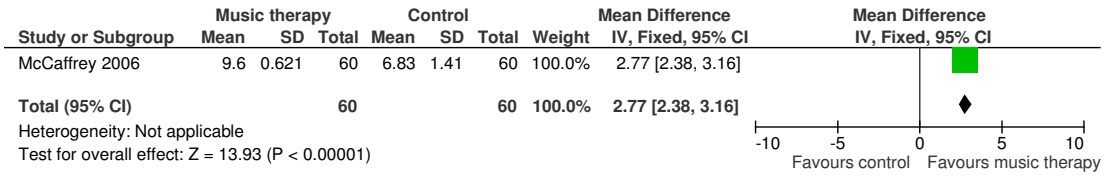
NB: forest plot scale 0.01 to 100

Figure 10.7: patient's readiness to ambulate after undergoing surgery



NB: Scale -10 to 10

Figure 10.8: patient satisfaction



NB: Scale -10 to 10

Multicomponent prevention

Figure 10.9: number of patients with delirium in hospital

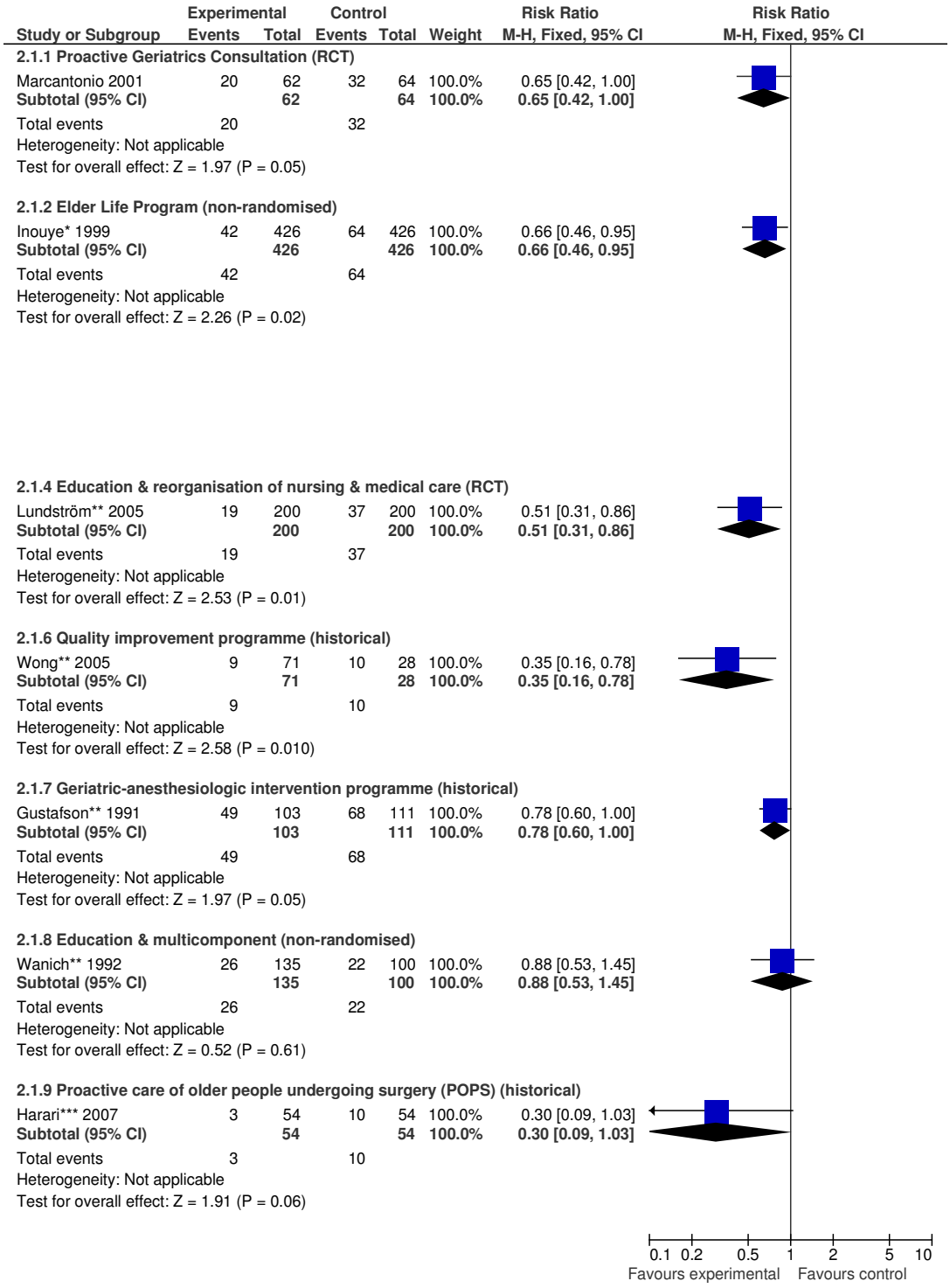


Figure 10.10: number of patients with delirium at 6 months follow-up

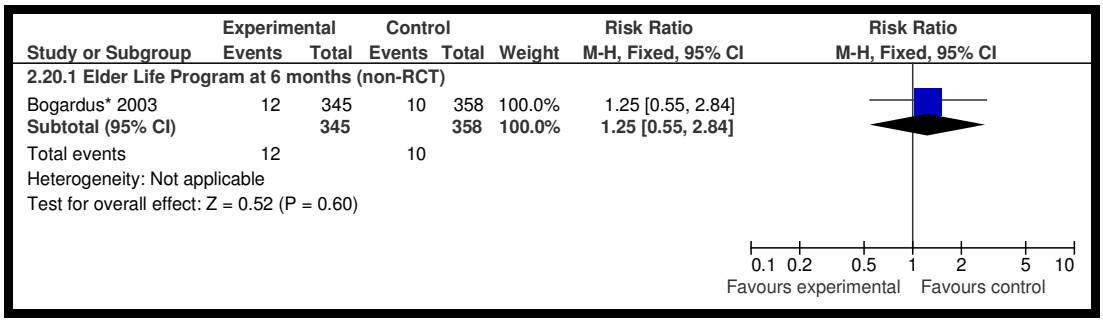


Figure 10.11: mean duration of delirium

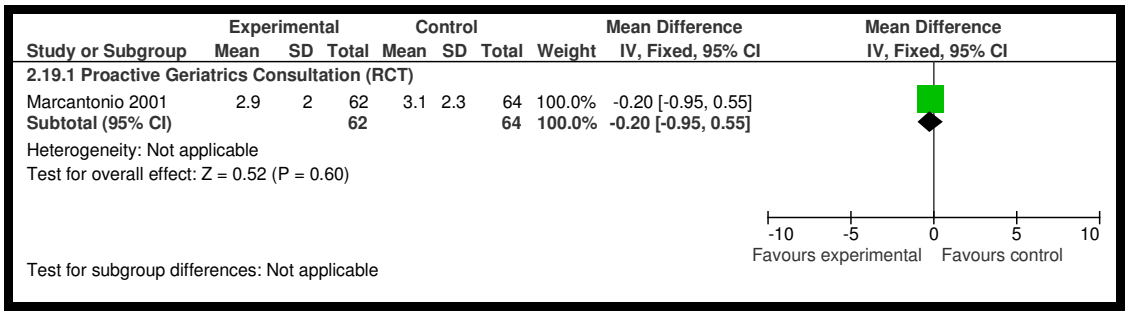


Figure 10.12: number of patients with delirium at 7 or more days

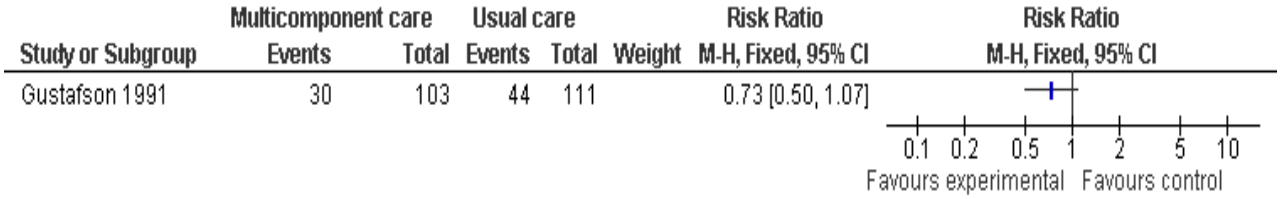


Figure 10.13: severity scores

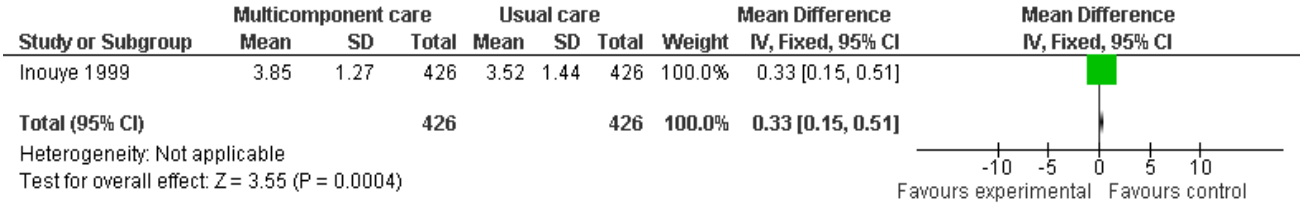


Figure 10.14: length of hospital stay

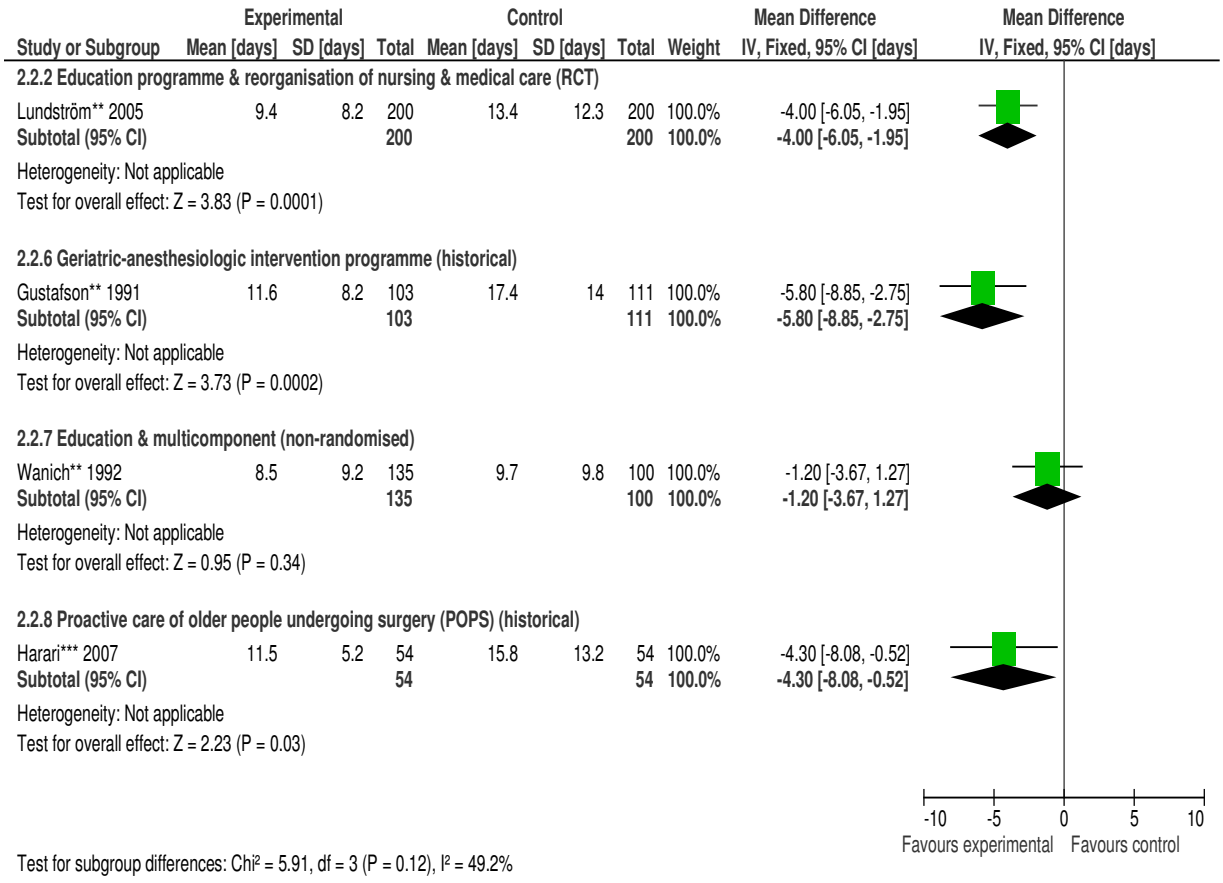


Figure 10.15: improvement in cognitive impairment at 5 days or discharge

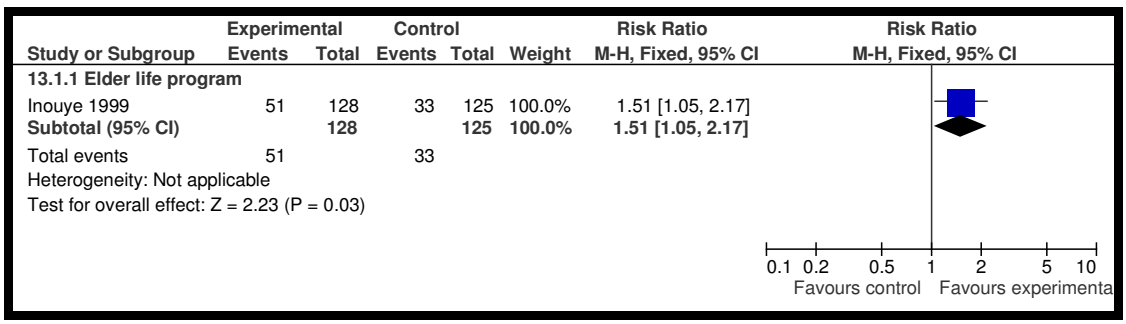


Figure 10.16: number of patients discharged to a new institutional setting

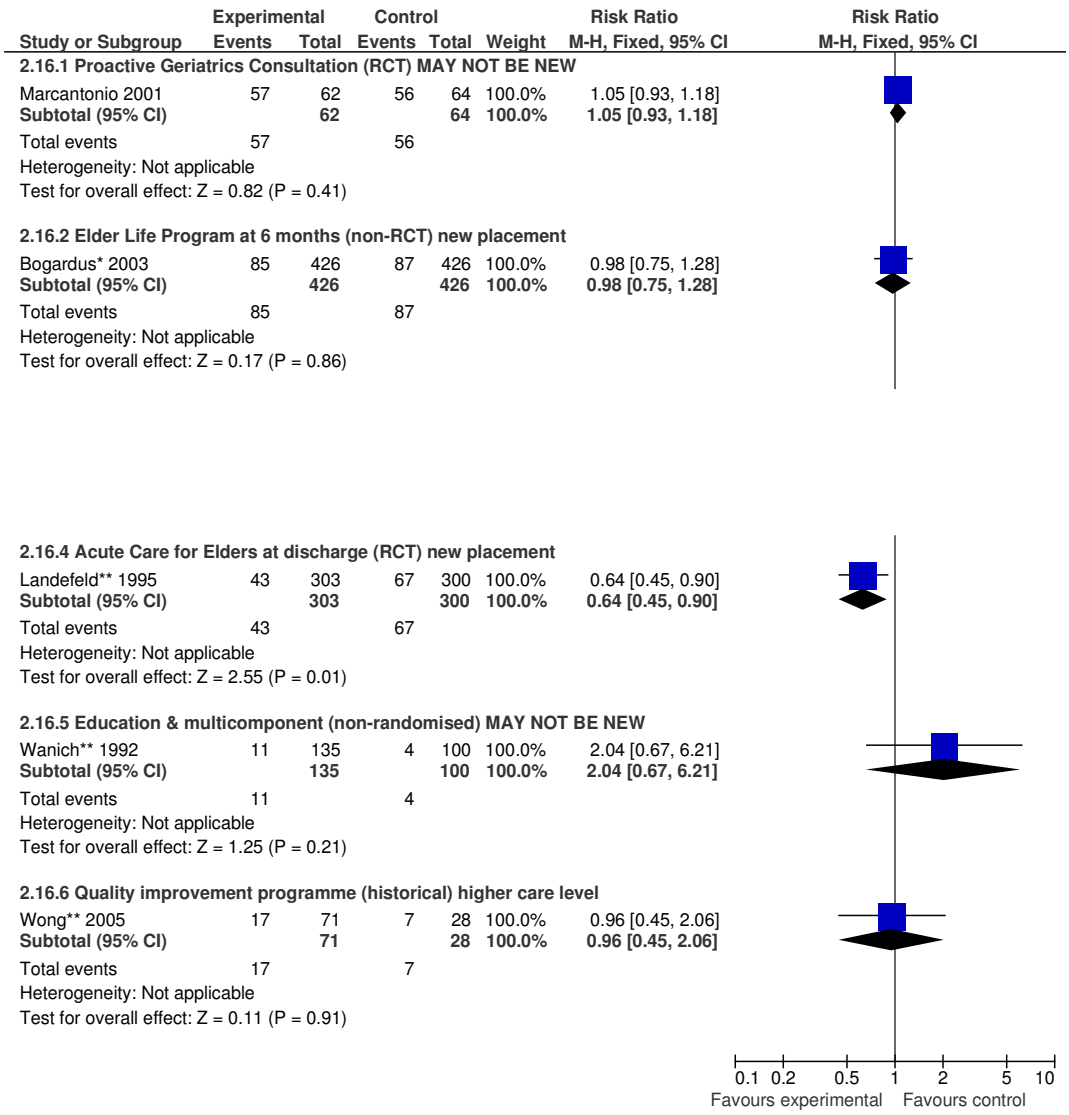


Figure 10.17: mortality in hospital

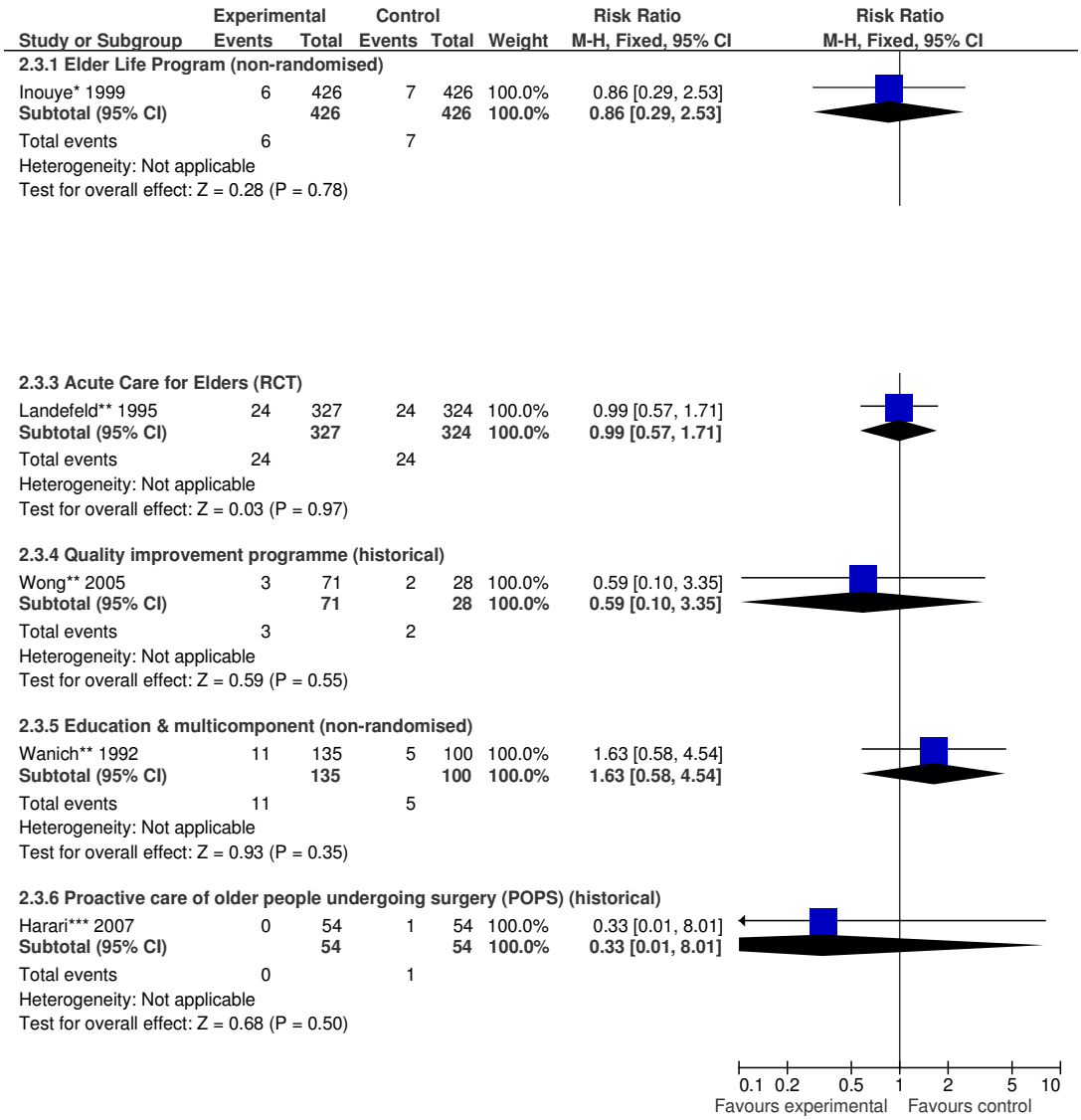


Figure 10.18: mortality at up to 6 months follow up

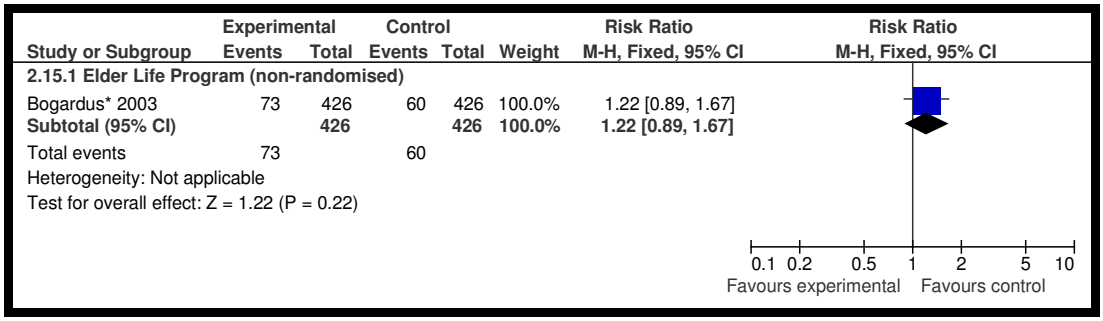


Figure 10.19: number of patients with an improvement in ADL

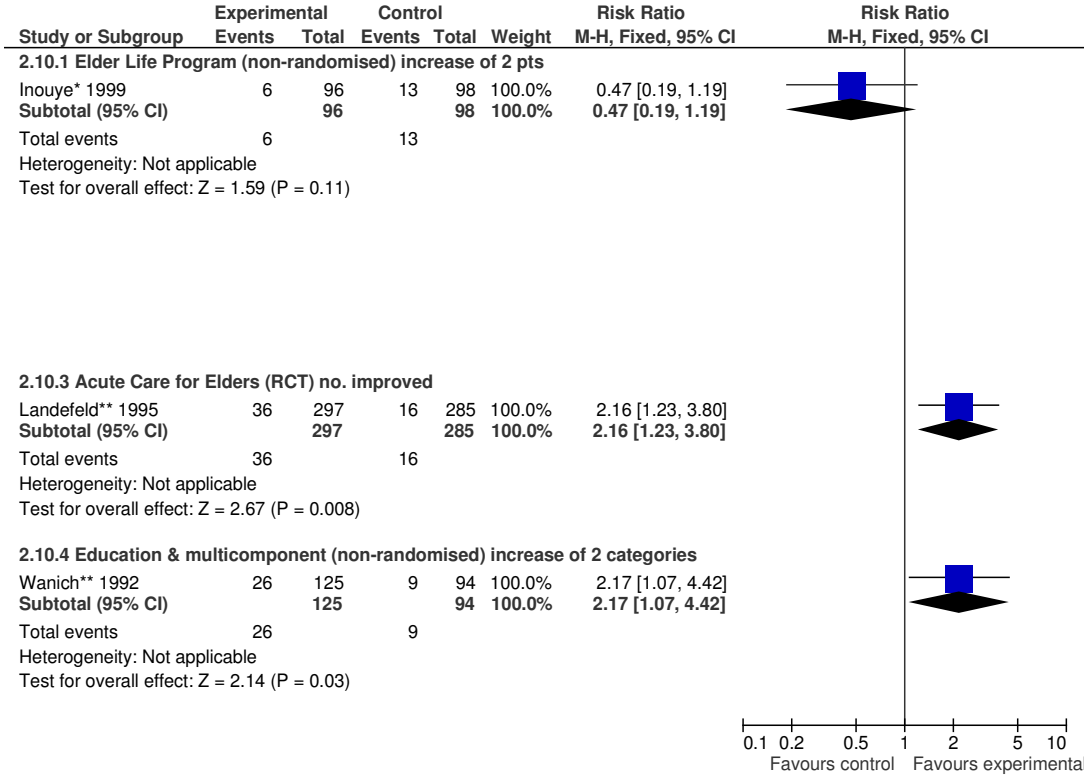


Figure 10.20: adjusted ADL score

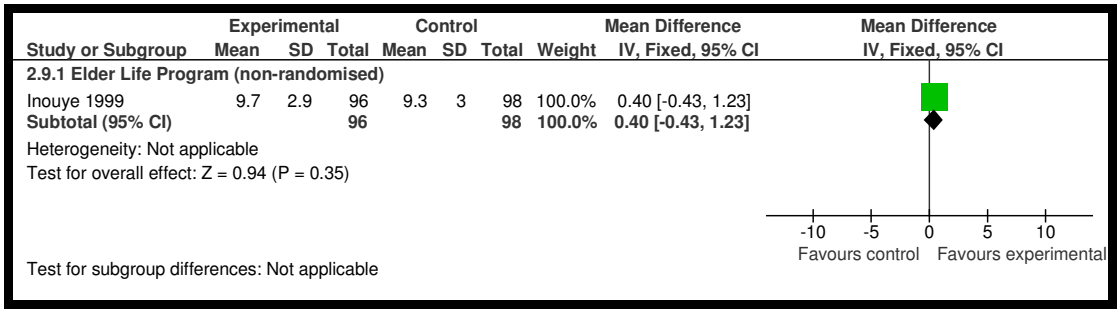


Figure 10.21: number of patients with severe falls

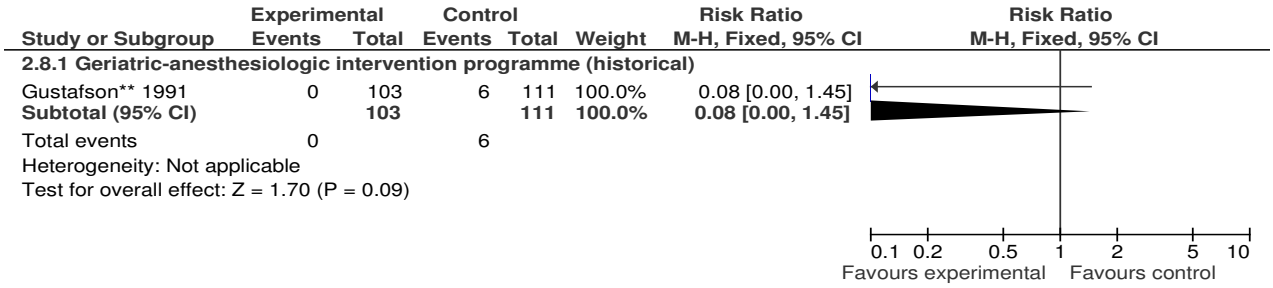


Figure 10.22: urinary tract infections

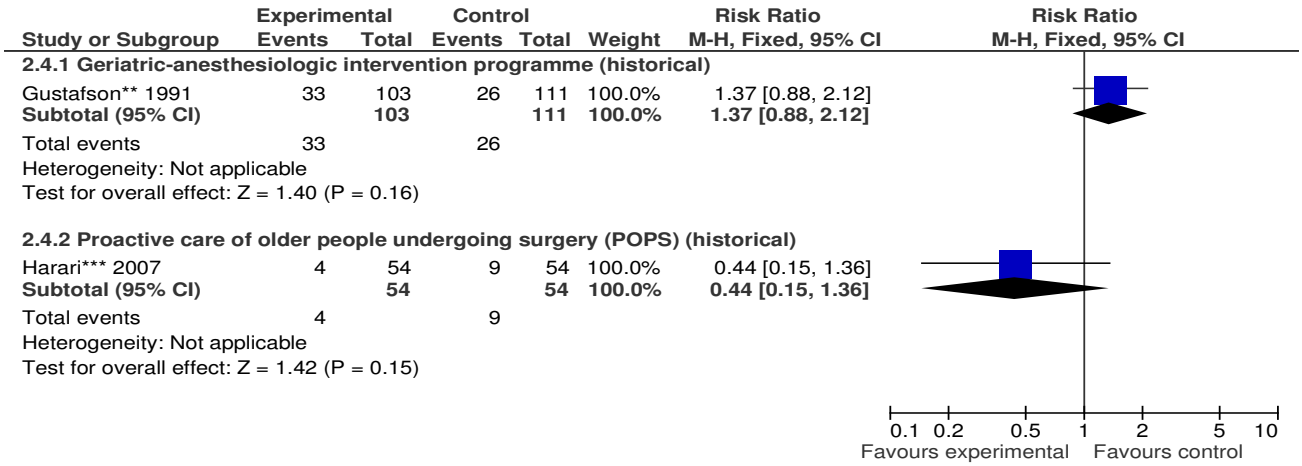
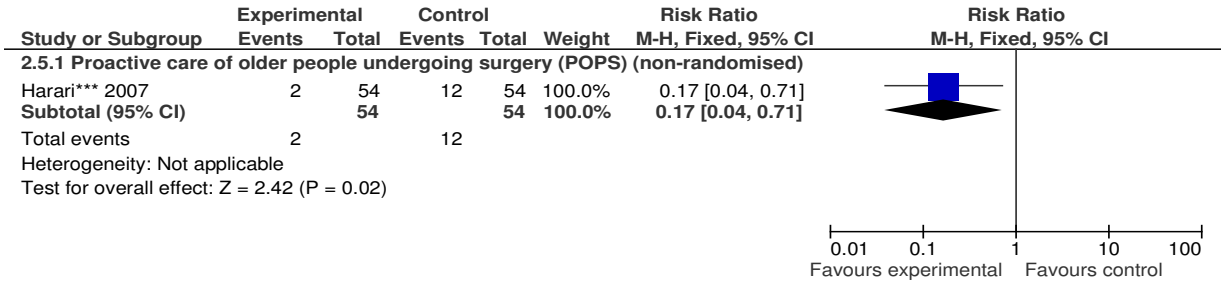


Figure 10.23: wound infections



NB scale 0.01 to 100

Figure 10.24: pressure ulcers

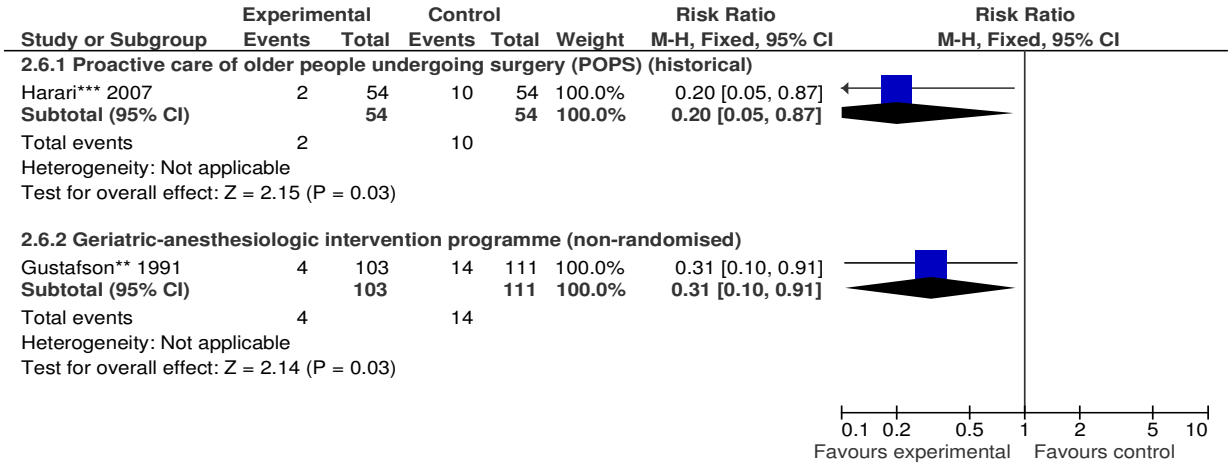


Figure 10.25: early vision correction at reassessment (day 5 or at discharge if earlier)

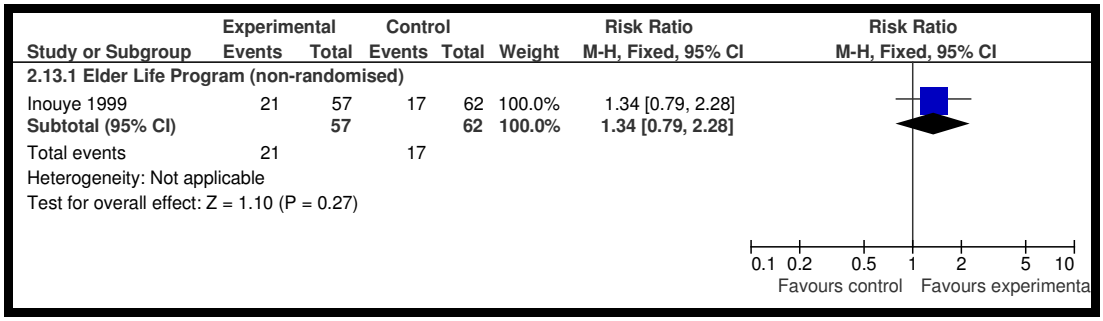


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Figure 10.26: whisper test

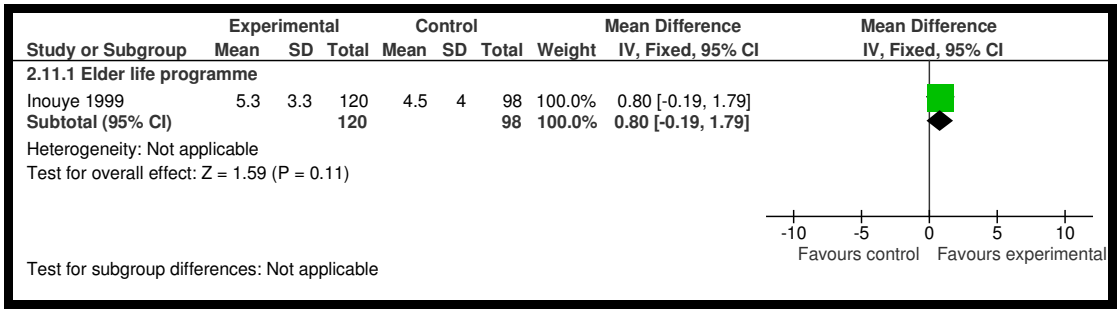


Figure 10.27: whisper test – number of patients with improvement by one point

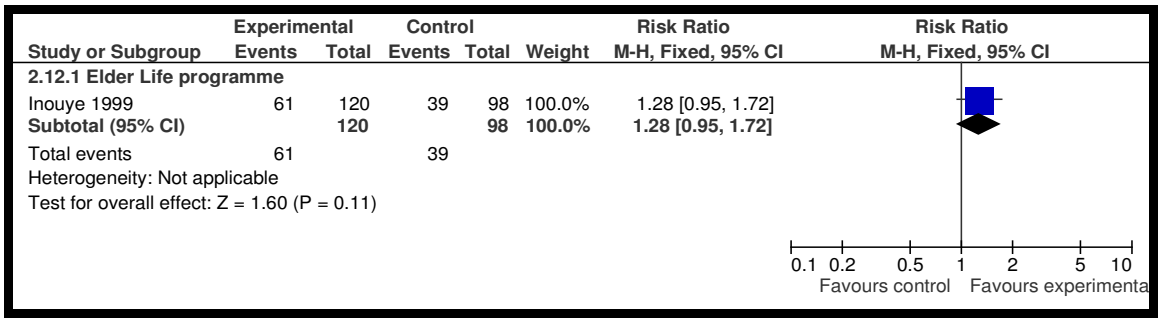


Figure 10.28: number of patients with improvement in dehydration

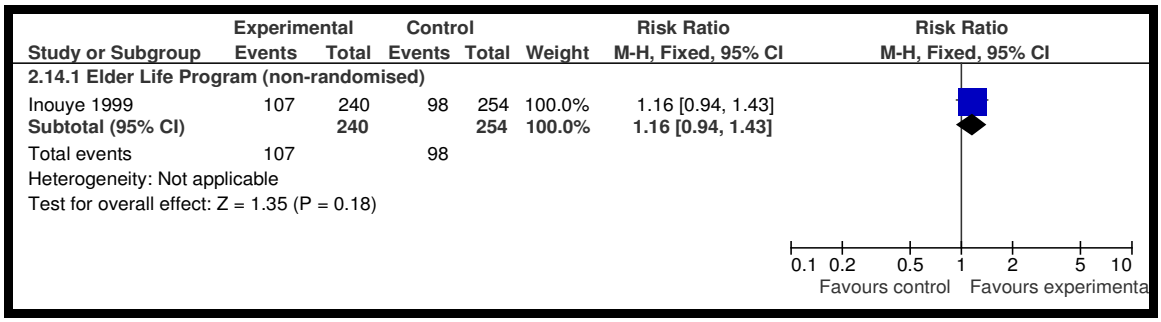


Figure 10.29: number of patients with dehydration

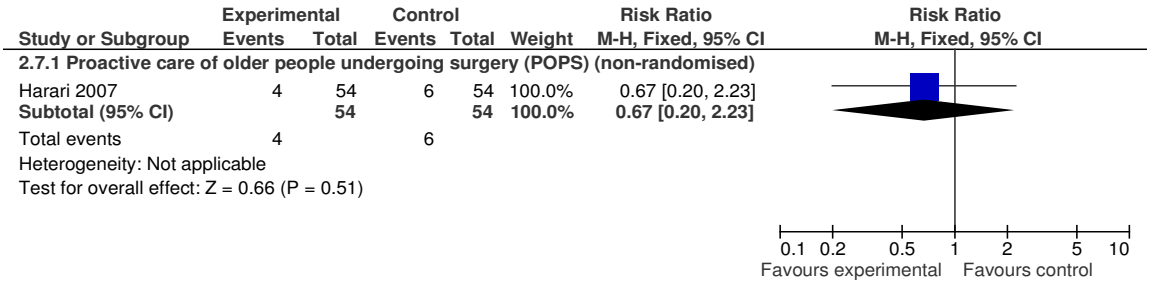
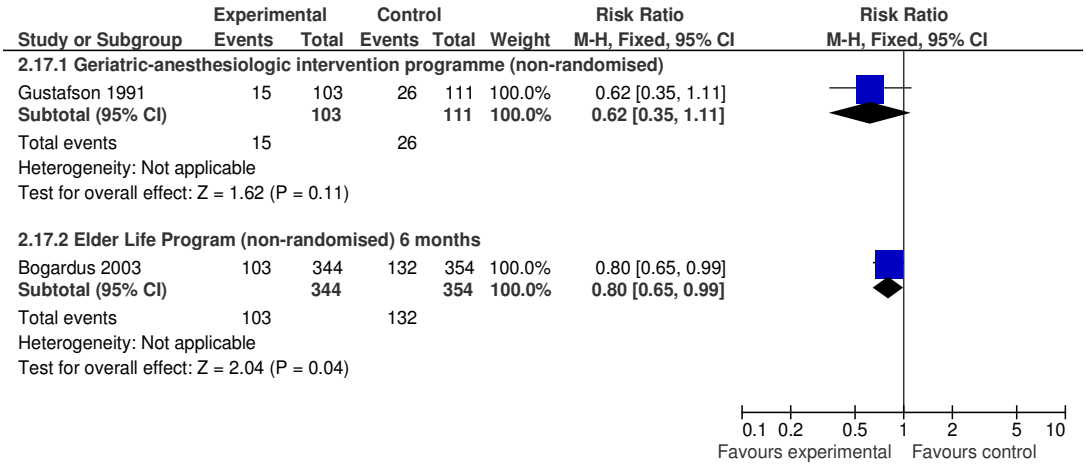


Figure 10.30: urinary incontinence



Prevention of delirium: pharmacological

Acetylcholinesterase inhibitor versus placebo

Figure 11.1: number of patients with delirium

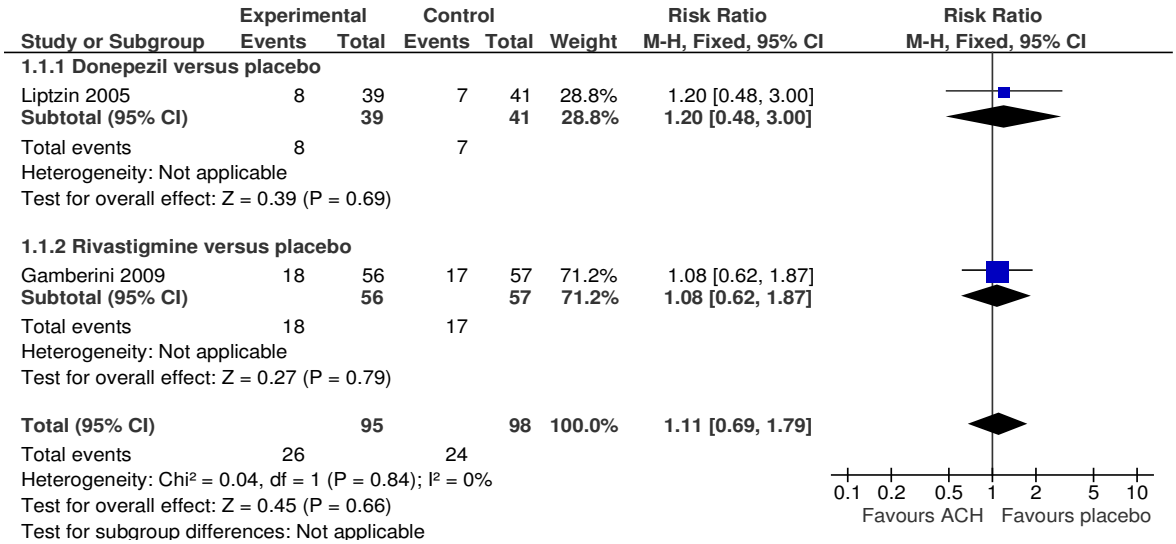


Figure 11.2: duration of delirium

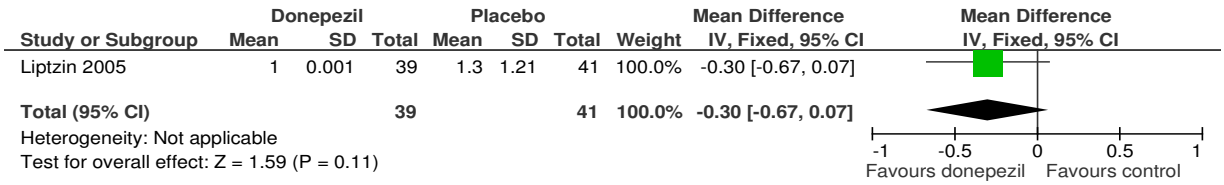


Figure 11.3: length of hospital stay

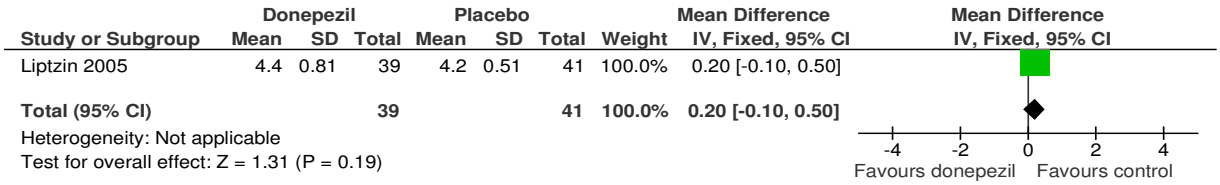
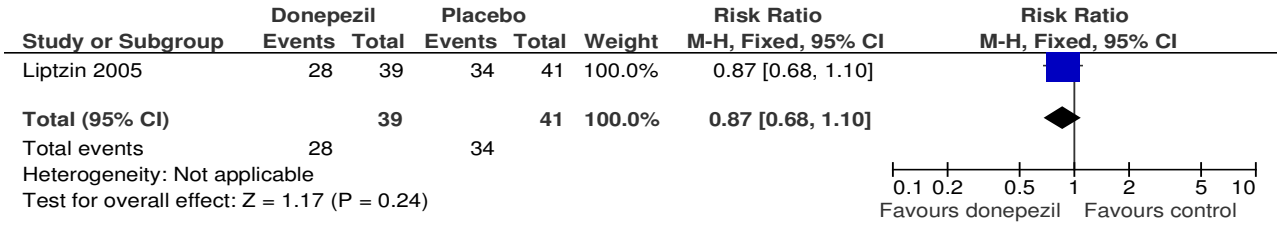


Figure 11.4: discharge to rehabilitation facility



Typical antipsychotics versus placebo

Figure 11.5: number of patients with postoperative delirium

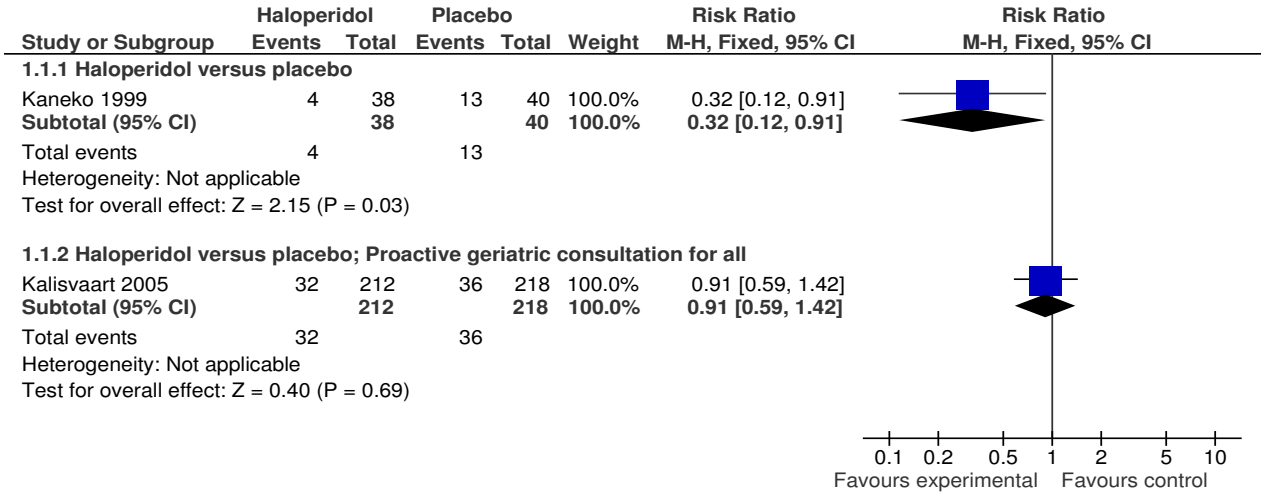


Figure 11.6: severity of delirium scores

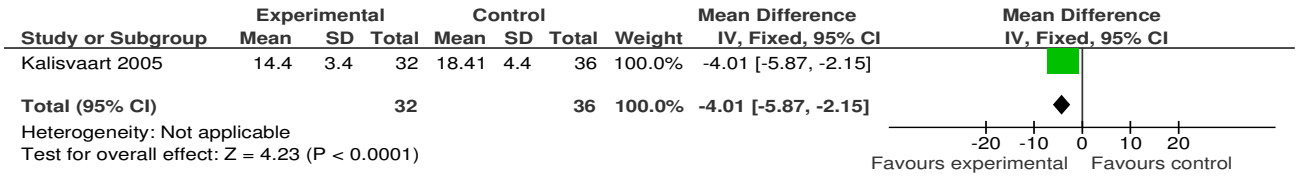


Figure 11.7: duration of delirium

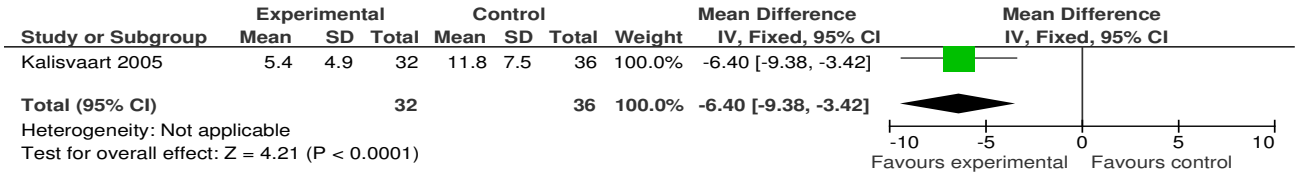
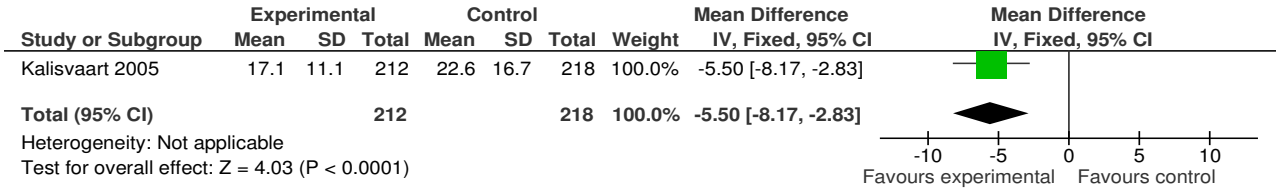
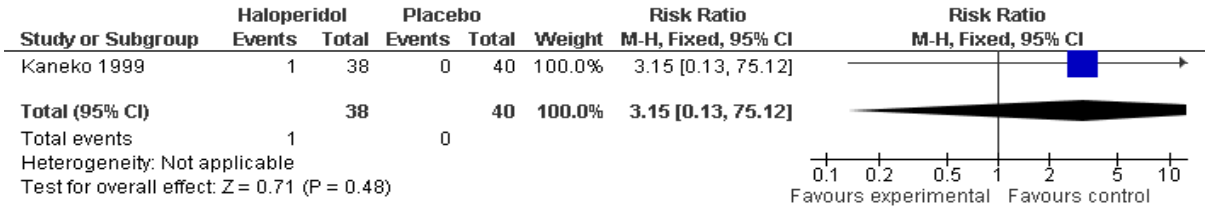


Figure 11.8: length of hospital stay



NB: Scale -10 to 10

Figure 11.9: number of patients with adverse events



Atypical antipsychotics versus placebo

Figure 11.10: number of patients with delirium

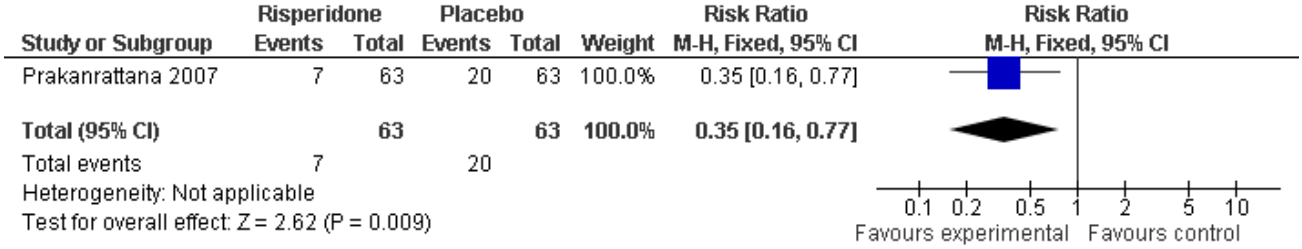


Figure 11.11: length of ICU stay

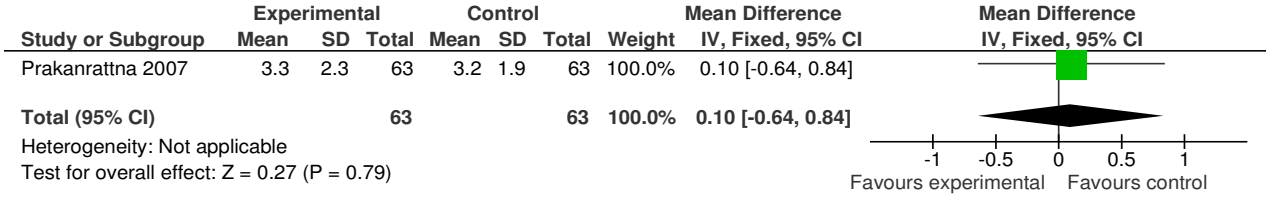
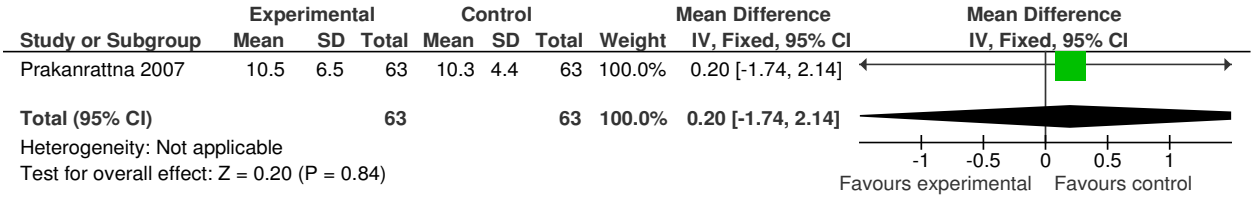


Figure 11.12: length of hospital stay



Pharmacological Prevention in long-term care

Acetylcholinesterase inhibitor versus placebo

Figure 11.13: incidence of delirium

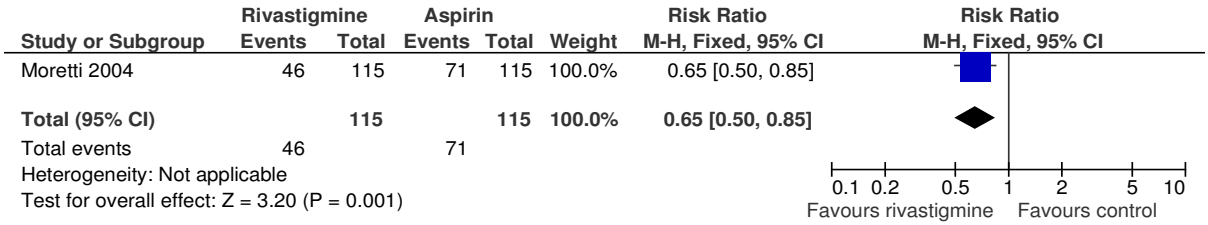


Figure 11.14a: duration of delirium (all patients)

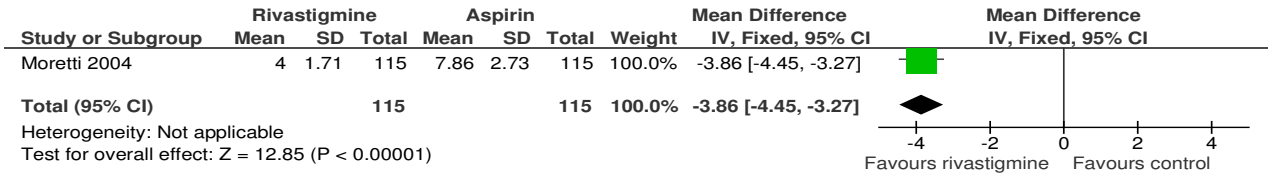


Figure 11.14b: duration of delirium assuming mean is across those with delirium

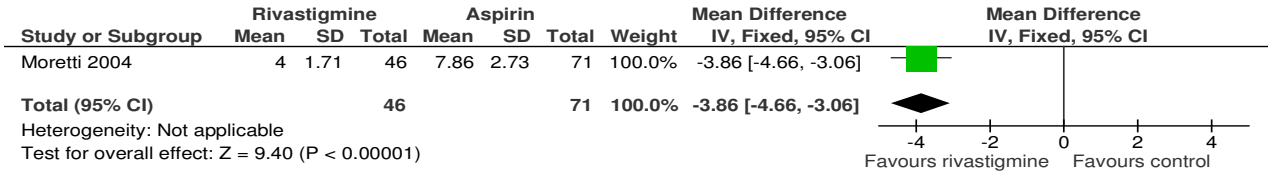


Figure 11.15: cognitive impairment (Clinical Dementia Rating change scores)

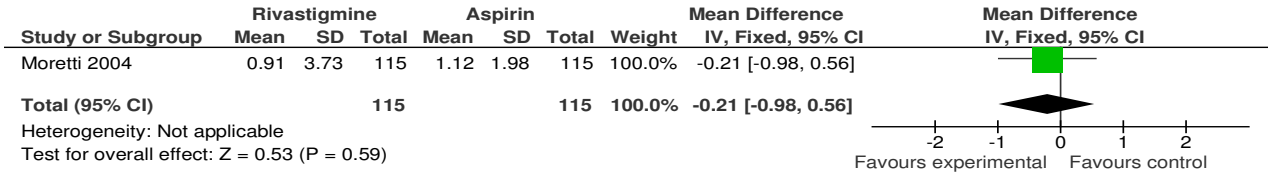


Figure 11.16a: BEHAVE-AD scale change scores

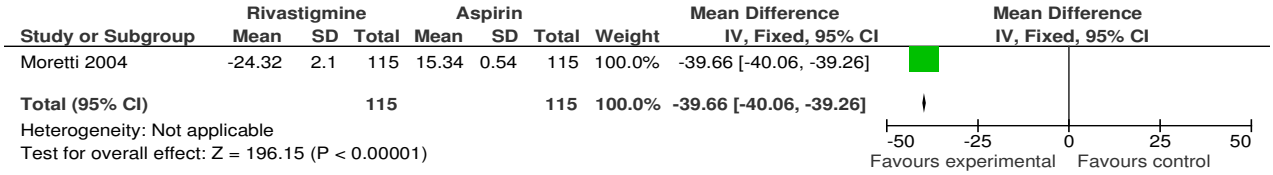
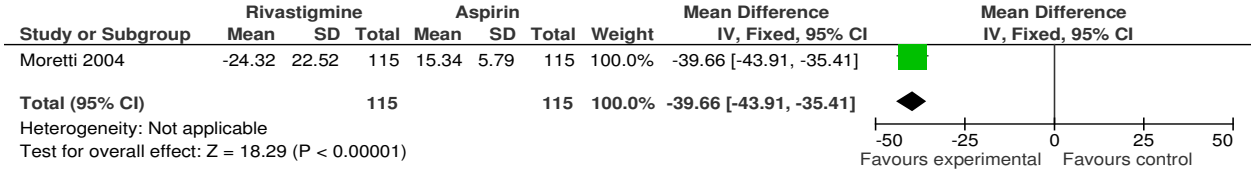


Figure 11.16b: BEHAVE-AD overall change scores



Treatment of delirium: non-pharmacological (hospital setting)

Multicomponent intervention

Figure 12.1: number of patients with complete response.

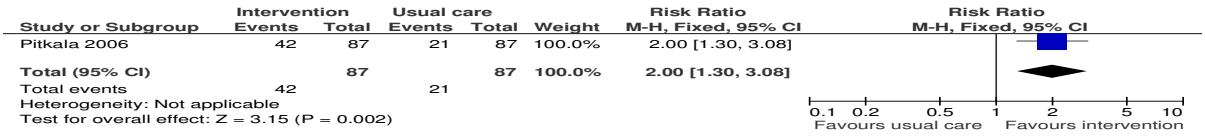


Figure 12.2: cognitive impairment

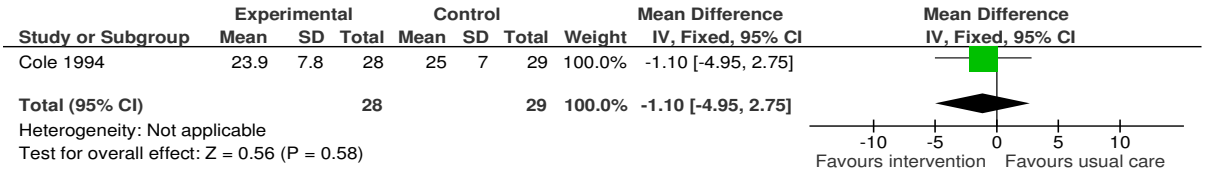


Figure 12.3: length of stay

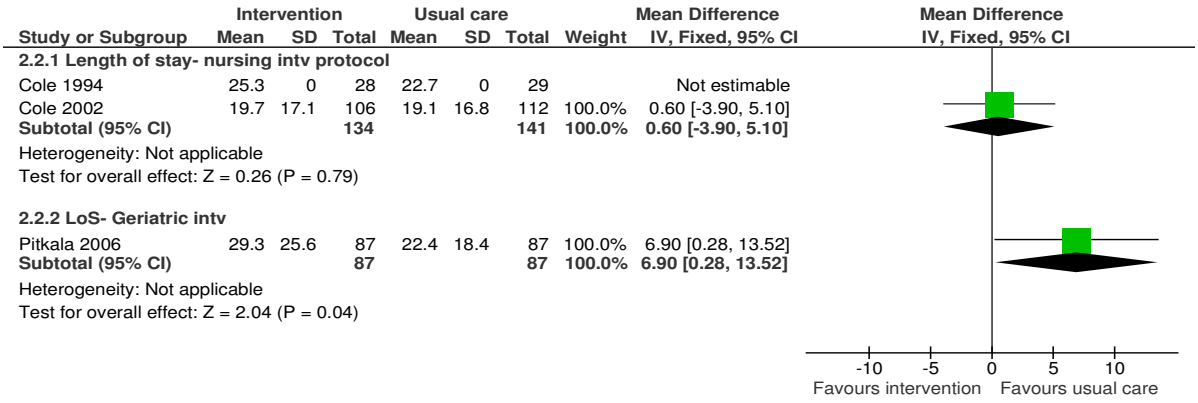


Figure 12.4: discharge to higher dependency or to new long-term care (RCTs)

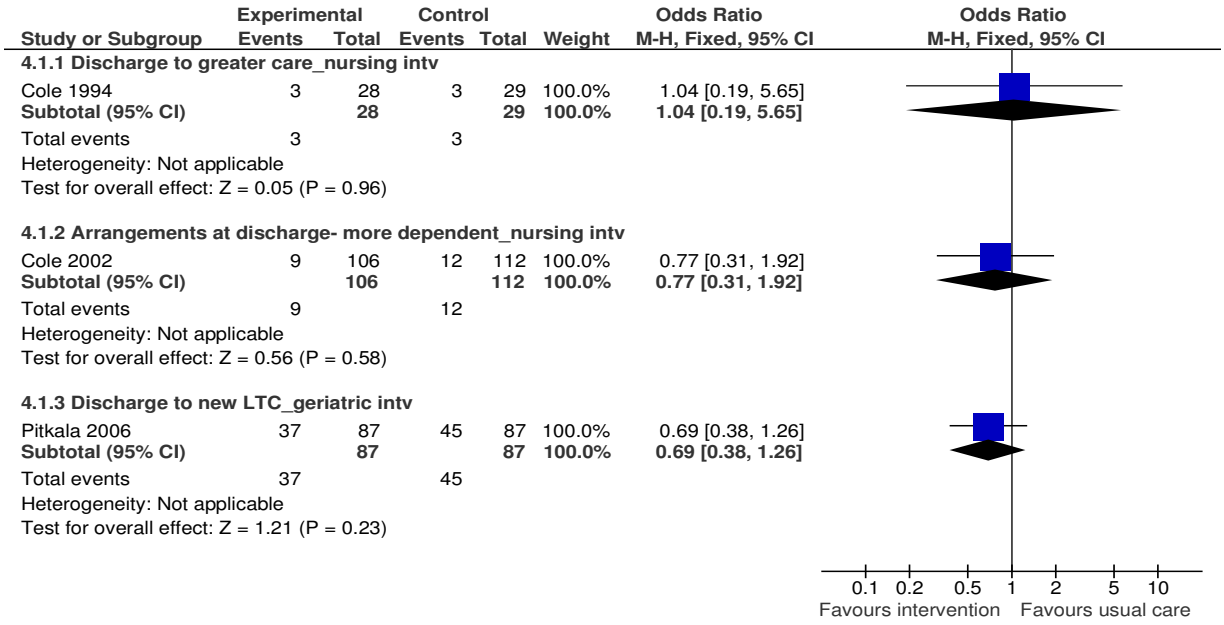
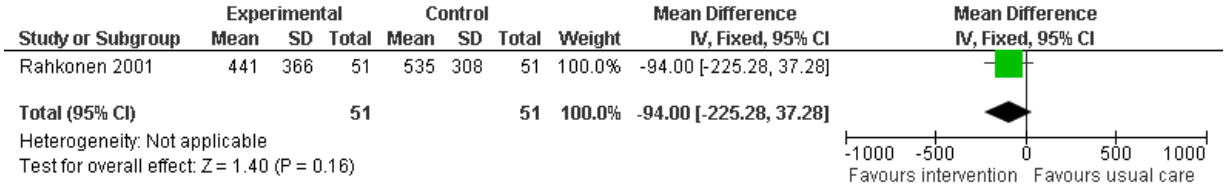
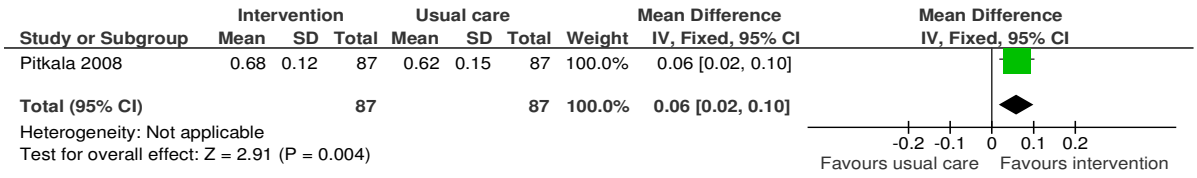


Figure 12.5: number of days in new long-term care (non RCT)



NB: Scale -1000 to 1000

Figure 12.6: improvement in HRQoL



NB: Scale -0.2 to 0.2

Figure 12.7: mortality (RCTs only)

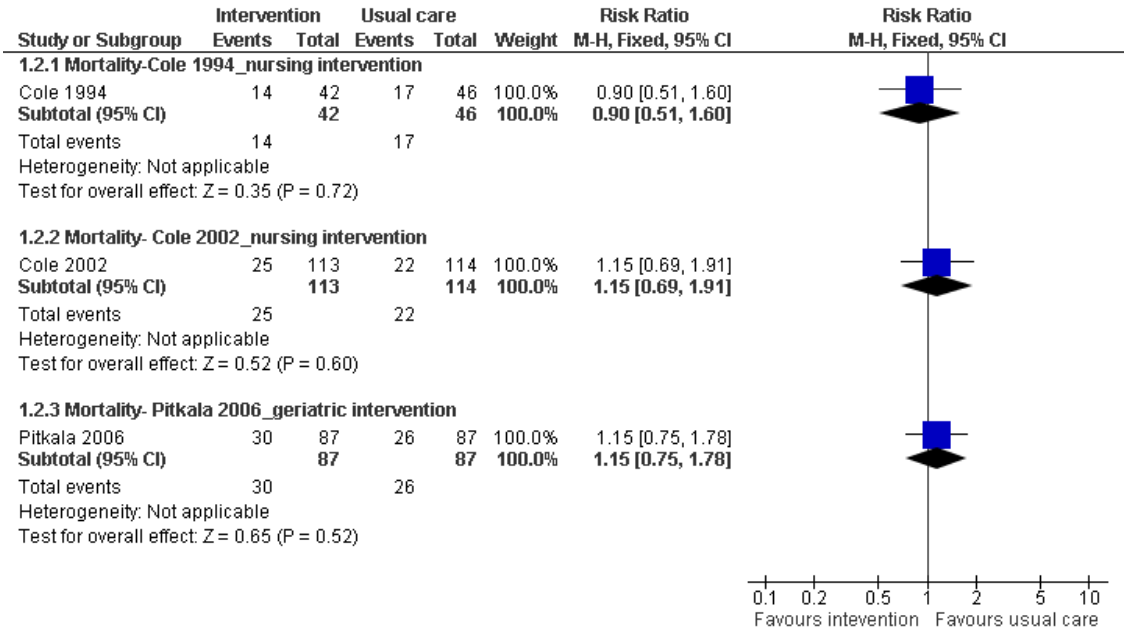
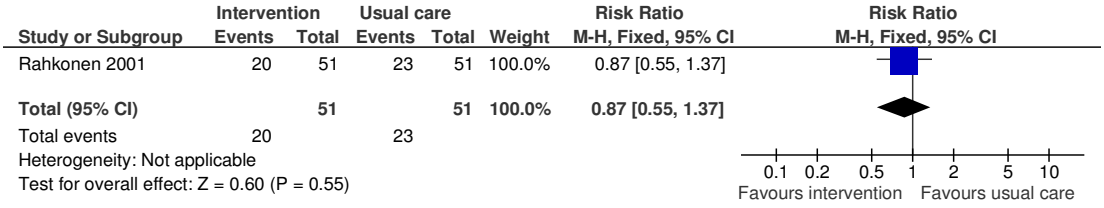


Figure 12.8: mortality (non-RCT)



Treatment of delirium: pharmacological

Typical antipsychotics versus placebo

Figure 13.1: complete response

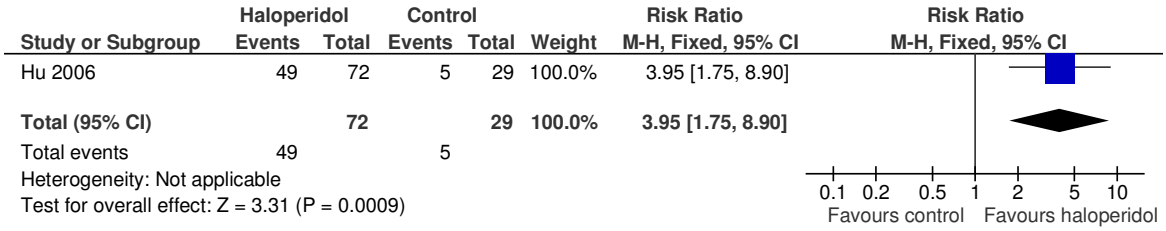
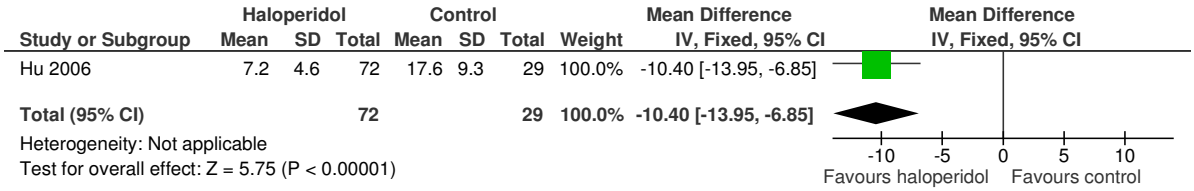


Figure 13.2: severity of delirium



Atypical antipsychotics versus placebo

Figure 13.3: complete response

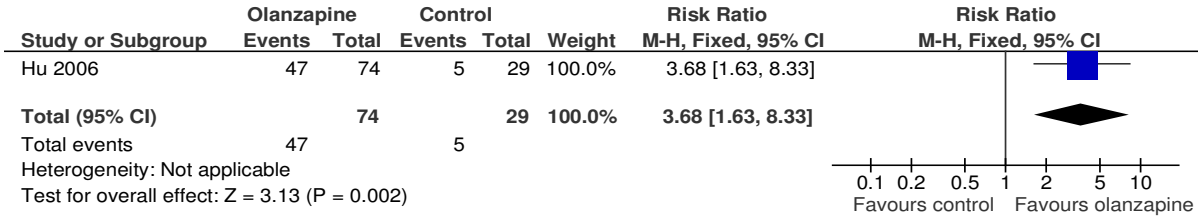
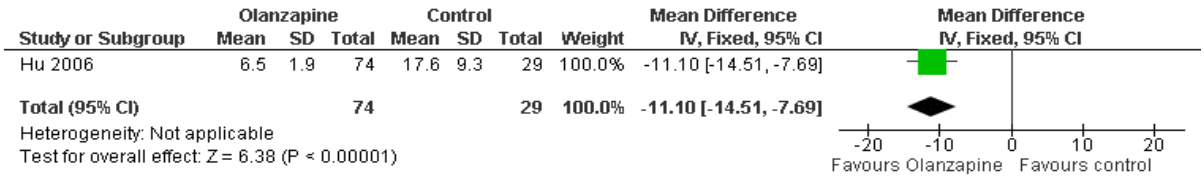


Figure 13.4: severity of delirium



NB: Scale -20 to 20

Atypical antipsychotics1 versus atypical antipsychotics 2

Figure 13.5: duration of delirium

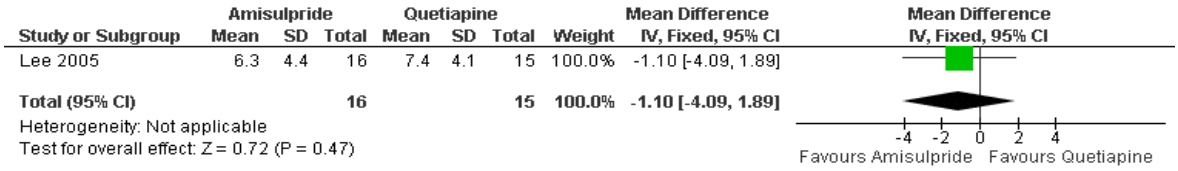


Figure 13.6: severity of delirium

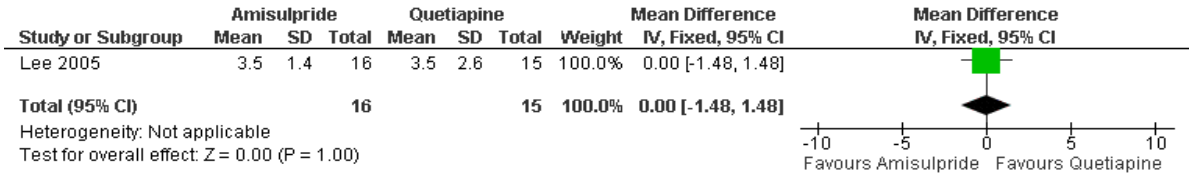


Figure 13.7: complete response

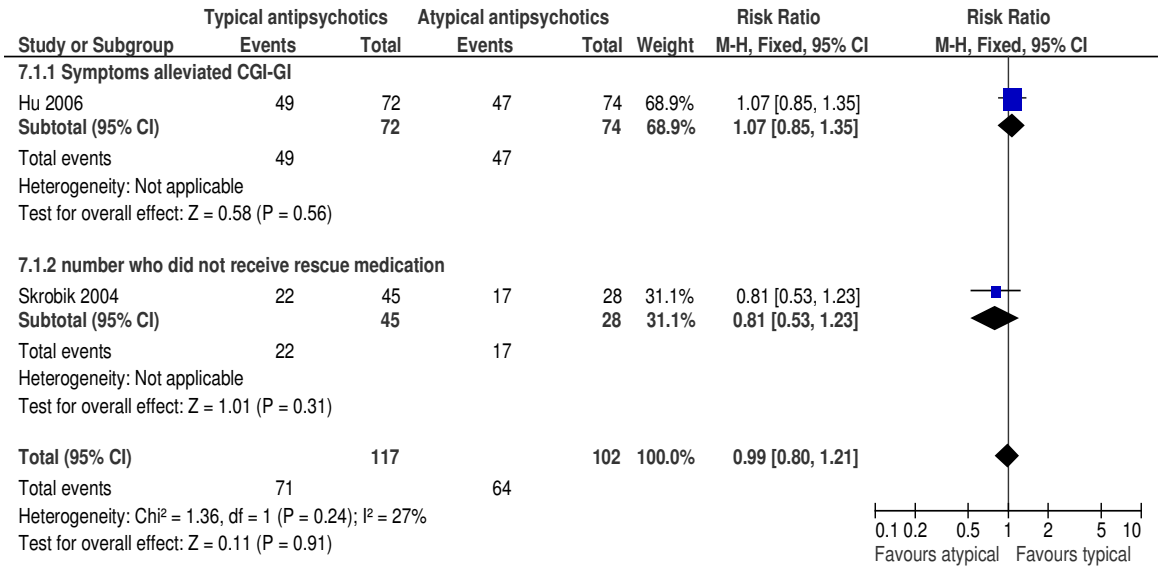
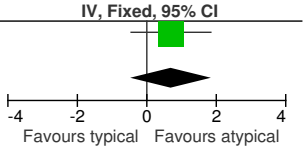


Figure 13.8: severity of delirium

Study or Subgroup	Typical antipsychotics Mean	SD	Total	Atypical antipsychotics Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Hu 2006	7.2	4.6	72	6.5	1.9	74	100.0%	0.70 [-0.45, 1.85]
Total (95% CI)			**72**			**74**	**100.0%**	**0.70 [-0.45, 1.85]**

Heterogeneity: Not applicable
Test for overall effect: Z = 1.20 (P = 0.23)

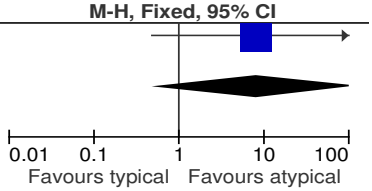


NB: Scale -4 to 4

Figure 13.9 Adverse events

Study or Subgroup	Experimental Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Skrobik 2004	6	45	0	28	100.0%	8.20 [0.48, 140.09]
Total (95% CI)		**45**		**28**	**100.0%**	**8.20 [0.48, 140.09]**
Total events	6		0			

Heterogeneity: Not applicable
Test for overall effect: Z = 1.45 (P = 0.15)



Adverse effects

Figure 14.1: antipsychotics as a risk factor for stroke

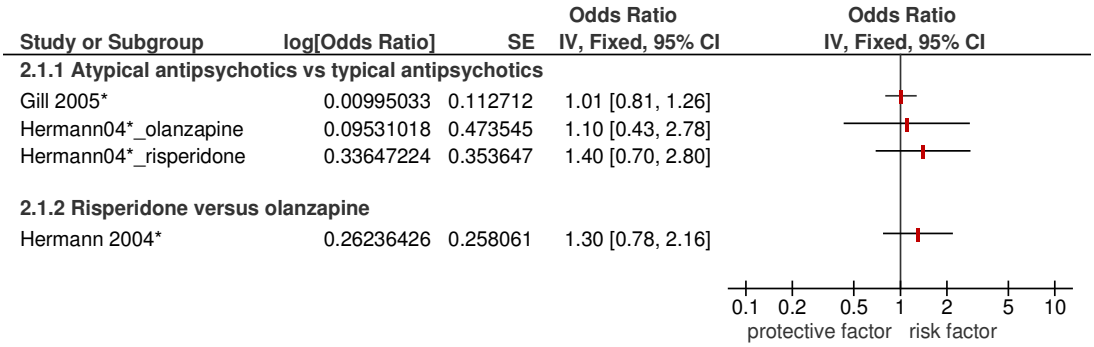


Figure 14.2: antipsychotics as a risk factor for stroke