National Clinical Guideline Centre

Draft for consultation

Preoperative tests

Routine preoperative tests for elective surgery

Clinical guideline <...>

Appendix I: GRADE tables

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Draft for consultation

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Royal College of Physicians

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Appendix I: GRADE tables

I.1 Resting electrocardiogram

I.1.1 Non-cardiac, non-vascular surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Relative effect with 95% CIs	
Normal electrocardiogram versus prolonged QTc interval for predicting perioperative cardiovascular event (adjusted ORs) [adults aged > 18 years]								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR[95% CI]: 1.04 [1.03, 1.06]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*

I.1.2 Elective surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Relative effect with 95% CIs	
Normal electrocardiogram versus abnormal electrocardiogram for predicting postoperative complications including cardiac, cerebrovascular, respiratory and bleeding (adjusted ORs)								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR[95% CI]: 2.81 [1.36, 5.82]	LOW

Quality assessment							Adjusted effects	Quality

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*

I.1.3 Hip fracture surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Relative effect with 95% CIs	
Normal electrocardiogram versus abnormal electrocardiogram for predicting one year mortality(adjusted RRs) [adults mean age 81 years]								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted RR[95% CI]: 1.54 [0.95, 2.49]	VERY LOW
Normal electrocardiogram versus abnormal electrocardiogram for predicting survival rate(adjusted HRs)								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR[95% CI]: 2.66 [1.54, 4.59]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*

[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.1.4 Major vascular surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Relative effect with 95% CIs	

Quality assessment							Adjusted effects	Quality
Normal electrocardiogram versus ST segment depression for predicting long term survival (adjusted HRs)								
1	Cohort study	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR[95% CI]: 1.94 [1.48, 2.54]	HIGH

I.1.5 Non-cardiac surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Relative effect with 95% CIs	
Normal electrocardiogram versus abnormal electrocardiogram for predicting postoperative cardiac complications (adjusted ORs)								
1	Cohort study	Serious risk of bias[a]	No serious inconsistency	No serious indirectness	Very serious risk of imprecision[b]	None	Adjusted OR[95% CI]: 0.63 [0.28, 1.42]	VERY LOW
Normal electrocardiogram versus left bundle branch block for predicting postoperative myocardial infarction (adjusted ORs)								
1	Cohort study	Very serious risk of bias[a]	No serious inconsistency	No serious indirectness	Serious risk of imprecision[b]	None	Adjusted OR[95% CI]: 3.1 [1.00, 9.61]	MODERATE
Normal electrocardiogram versus right bundle branch block for predicting postoperative myocardial infarction (adjusted ORs)								
1	Cohort study	Very serious risk of bias[a]	No serious inconsistency	No serious indirectness	Serious risk of imprecision[b]	None	Adjusted OR[95% CI]: 2.1 [1.00, 4.41]	LOW
Normal electrocardiogram versus left bundle branch block for predicting death during admission (adjusted ORs)								
1	Cohort study	Very serious risk of bias[a]	No serious inconsistency	No serious indirectness	Serious risk of imprecision[b]	None	Adjusted OR[95% CI]: 3.5 [1.3, 9.42]	VERY LOW

Quality assessment							Adjusted effects	Quality

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.2 Resting echocardiogram

I.2.1

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other**	**After implementation**	**Prior to recommendations**	**Relative (95% CI)**	**Absolute**		
Delay in surgery												
1	Observational studies	Very serious[a]	No serious inconsistency	No serious indirectness	Very serious[b]	None	10/38 (26.3%)	3/22 (13.6%)	RR 1.93 (0.59 to 6.27)	127 more per 1000 (from 56 fewer to 719 more)	VERY LOW	IMPORTANT

[a] *Downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs*

I.2.2

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative resting echo	No echocardiography (non-cardiac surgery)	Relative (95% CI)	Absolute		
30-day mortality												
1	Observational studies	Serious [a]	No serious inconsistency	No serious indirectness	Serious [b]	None	693/35498 (2%)	609/35498 (1.7%)	RR 1.14 (1.02 to 1.27)	2 more per 1000 (from 0 more to 5 more)	VERY LOW	CRITICAL
Length of hospital stay (better indicated by lower values)												
1	Observational studies	Serious [a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	35498	35498	-	MD 0.31 higher (0.17 to 0.45 higher)	VERY LOW	IMPORTANT
Surgical site infection												
1	Observational studies	Serious [a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	4690/35498 (13.2%)	4570/35498 (12.9%)	RR 1.03 (0.98 to 1.08)	4 more per 1000 (from 3 fewer to 10 more)	VERY LOW	IMPORTANT

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs*

I.2.3 Laparoscopic Roux-en-Y gastric bypass surgery

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative resting echocardiography	No echocardiography	Relative (95% CI)	Absolute		
Length of hospital stay												
1	Observational studies	Serious [a]	No serious inconsistency	No serious indirectness	Serious [b]	None	26/46 (56.5%)	20/46 (43.5%)	-	MD 0.7 higher (0.13 lower to 1.53 higher)	VERY LOW	IMPORTANT

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs*

I.3 Cardiopulmonary exercise testing (CPET)

I.3.1 Intervention review

I.3.1.1 Open AAA surgery

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative CPET	No CPET	Relative (95% CI)	Absolute		

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative CPET	No CPET	Relative (95% CI)	Absolute		
30 day mortality												
1	Observational studies	Very serious [a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	188	128	RR 0.32 (0.11 to 0.94)	86 fewer per 1000 (from 8 fewer to 112 fewer)	VERY LOW	CRITICAL

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MIDs*

I.3.1.2 EVAR AAA surgery

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative CPET	No CPET	Relative (95% CI)	Absolute		
30 day mortality												
1	Observational studies	Very serious [a]	No serious inconsistency	No serious indirectness	Very serious imprecision[b]	None	188	128	Peto OR 3.91 (0.05 to	145 more per 1000 (from 0 fewer to	VERY LOW	CRITICAL

Quality assessment							Number of patients		Effect		Quality	Importance
N° of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Preoperative CPET	No CPET	Relative (95% CI)	Absolute		
									329.71	77 more)		

[1] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[2] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MID*

I.3.2 Prognostic review

I.3.2.1 Abdominal aortic aneurysm (AAA) repair surgery - aerobic threshold

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
30-day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 6.35 [1.84-21.92]	LOW
35-month survival								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 0.84 [0.73,0.96]	LOW
Cardiac complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.55 [0.37, 0.84]	LOW

Quality assessment							Adjusted effects	Quality
Respiratory complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR [95% CI]: =0.85 [0.62, 1.17]	VERY LOW
All complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: =0.71 [0.57, 0.88]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.2 Abdominal aortic aneurysm (AAA) repair surgery – VE/VO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
90-day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 8.59 [2.33, 31.67]	VERY LOW
3 year survival								
1	Cohort study	serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 1.63 [1.01-2.63]	MODERATE
Cardiac complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR [95% CI]: 1.03 [0.81, 1.31]	VERY LOW

Quality assessment							Adjusted effects	Quality
Pulmonary complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR [95% CI]: 0.89 [0.69, 1.15]	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.3 Abdominal aortic aneurysm (AAA) repair surgery – VE/VCO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Survival at 35 months								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision.	None	Adjusted HR [95% CI]: 1.13 [1.07, 1.20]	LOW
Survival at 3 years								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 1.63 [1.01-2.63]	MODERATE
Cardiac complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR [95% CI]:0.96 [0.86-1.09]	VERY LOW
Respiratory complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.18 [1.05-1.33]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.4 Lung resection surgery – VO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.87 [0.76,0.99]	LOW
Complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.84 [0.75, 0.94]	LOW
Cardiovascular complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.80 [0.68, 0.92]	LOW
All complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 0.79 [0.71-0.88]	LOW
Cardiopulmonary complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 0.05 [0.01- 0.25]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.5 Lung resection surgery – VE/CO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Respiratory complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.09 [1.03, 1.16]	LOW
30-day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.24 [1.06, 1.45]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.3.2.6 Colorectal surgery – VO_2

Any complication								
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	Number of studies
Any complication								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.60 [0.45, 0.80]	LOW
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.77 [0.66, 0.90]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.3.2.7 Pancreaticoduodenectomy – anaerobic threshold

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
In-hospital mortality – (Ausania 2012)								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 1.32 [0.14, 12.43]	VERY LOW
In-hospital mortality – (Junejo 2014)								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 0.90 [0.52-1.56]	VERY LOW
Cardiorespiratory complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]:2.88 [0.6, 12.64]	VERY LOW
Cardiopulmonary complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 1.05 [0.82, 1.34]	VERY LOW
All complications - (Ausania 2012)								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]:3.73 [1.33, 10.51]	LOW
All complication – (Junejo 2014)								

Quality assessment							Adjusted effects	Quality
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]:1.07 [0.83, 1.38]	VERY LOW
Pancreatic leak								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]:5.79 [1.62, 20.69]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.8 Pancreaticoduodenectomy – VO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
In-hospital mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 1.03 [0.77-1.38]	VERY LOW
30-day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 1.32 [0.91-1.91]	VERY LOW
All complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]:1.00 [0.86-1.16]	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null lin*

I.3.2.9 Pancreaticoduodenectomy – VE/VCO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
30-day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.35 [1.03, 1.77]	LOW
In hospital mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.26 [1.05, 1.51]	LOW
All complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 0.97[0.89, 1.06]	VERY LOW
Cardiopulmonary complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR [95% CI]: 1.00 [0.86, 1.16]	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.10 Other surgery types – anaerobic threshold

Quality assessment	Adjusted effects	Quality

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 0.74 [0.57, 0.96]	LOW
Complications								
1	Cohort study	Serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR[95% CI]0.44 [0.30, 0.64]	MODERATE
Length of hospital stay								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR [95% CI]: 0.47 [0.28-0.80]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.3.2.11 Other surgery types – VO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Complications – Peak VO_2 <15.8mL/kg/min								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 12.89 [1.14-145.76]	LOW

Quality assessment							Adjusted effects	Quality
Complications – continuous								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 1.61 [1.19, 2.18]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.3.2.12 Other surgery types – VE/VCO_2

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Any complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 3.97 [1.44-10.95]	LOW
Cardiopulmonary complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR [95% CI]: 3.45 [1.3-9.09]	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.4 Polysomnography

I.4.1 Intervention evidence

I.4.1.1 Elective procedures in general surgery, gynaecology, orthopaedics, urology, plastic surgery, ophthalmology and neurosurgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Respiratory complications								
1	Intervention	Very serious[a]	No serious inconsistency	Serious indirectness[b]	Very serious[c]	None	RR 1.43 (0.96 to 2.06)	VERY LOW
Cardiac complications								
1	Intervention	Very serious[a]	No serious inconsistency	Serious indirectness[b]	Very serious[c]	None	RR 1.94 (0.74 to 5.08)	VERY LOW
Neurologic complications								
1	Intervention	Very serious[a]	No serious inconsistency	Serious indirectness[b]	Very serious[c]	None	RR 0.65 (0.11 to 3.84)	VERY LOW
Unplanned ICU admission								
1	Intervention	Very serious[a]	No serious inconsistency	Serious indirectness[b]	Very serious[c]	None	OR 3.26 (0.56 to 19)	VERY LOW
Readmission within 30 days								
1	Intervention	Very serious[a]	No serious inconsistency	Serious indirectness[b]	Very serious[c]	None	RR 0.78 (0.21 to 2.85)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Downgraded as evidence contained patients undergoing neurosurgery*
[c] *Downgraded by 1 increment if the confidence interval crossed 1 MID or by 2 increments if the confidence interval crossed both MID*

I.4.2 Prognostic evidence

J.4.2.1 Bariatric surgery

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Post-operative pulmonary complications								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR 1.00 (0.44 to 2.27)	LOW
Surgical complications								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR 1.33 (0.79 to 2.24)	LOW
Other post-operative complications								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR 0.79 (0.49 to 1.27)	LOW
All post-operative complications								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision[b]	None	Adjusted OR 0.86 (0.59 to 1.25)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5 Health technology assessment – pulmonary function tests, full blood count and kidney function tests

I.5.1 Pulmonary function tests

I.5.1.1 Bariatric surgery

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
All postoperative complications – test: vital capacity (predictive value per 10% decrease in vital capacity)								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted RR 2.29 (2.2 to 2.38)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.5.1.2 Gastric cancer surgery – abnormal pulmonary function tests (defined based on FEV_1/FVC ratios and FEV_1 values)

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Surgical postoperative complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.75 (1.03 to 2.97)	LOW
Systemic postoperative complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.11 (0.32 to 3.85)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.5.2 Full blood count

I.5.2.1 JAll elective surgeries – anaemia

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Mortality - All anaemic patients								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 2.36 (1.57 to 3.55)	MODERATE
Mortality - Excluding patients with severe anaemia								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.79 (1.17 to 2.74)	MODERATE
Mortality - Excluding those who received RBC transfusions								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 3.04 (1.8 to 5.13)	MODERATE

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.5.2.2 Orthopaedic surgery – anaemia

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
RBC transfusion								
1	Cohort study	No serious risk of bias	No serious inconsistency	Serious[a]	No serious imprecision	None	Adjusted OR 4.7 (3.8 to 5.81)	MODERATE

Quality assessment							Adjusted effects	Quality
Allogenic blood transfusion – total hip arthroplasty								
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 2.03 (1.86-2.22)	LOW
Allogenic blood transfusion	**total knee arthroplasty**							
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 2.70 (2.52-2.91)	LOW
Increased length of stay >5 days								
1	Cohort study	No serious risk of bias	No serious inconsistency	Serious[a]	No serious imprecision	None	Adjusted OR 2.5 (1.9 to 3.29)	MODERATE
Readmission within 90 days								
1	Cohort study	No serious risk of bias	No serious inconsistency	Serious[a]	No serious imprecision	None	Adjusted OR 1.4 (1.1 to 1.78)	MODERATE
Periprosethetic joint infections								
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.95 (1.41 to 2.7)	LOW
Mortality - 30 day mortality								
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	Serious[c]	None	Adjusted OR 0.59 (0.1 to 3.53)	VERY LOW
Mortality - 90 day mortality								
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	Serious[c]	None	Adjusted OR 1.54 (0.5 to 4.73)	VERY LOW
Mortality - 1 year mortality								
1	Cohort study	Very serious[b]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.81 (1 to 3.29)	LOW
Hyperglycaemia								
1	Cohort study	Serious[b]	No serious inconsistency	No serious indirectness	Serious[c]	None	Adjusted OR 3.9 (0.91-17)	LOW

Severe hyperglycaemia								
1	Cohort study	Serious[b]	No serious inconsistency	No serious indirectness	Serious[c]	None	Adjusted OR 2.0 (0.5-8.1)	LOW

[a] *Sample includes different ages and ASA status*

[b] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*

[c] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5.2.3 Vascular surgery – anaemia and white blood cell count

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Anaemia: Major adverse cardiac event – Mild anaemia								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR 1.8 (0.8 to 4.05)	LOW
Anaemia: Major adverse cardiac event – Moderate anaemia								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 2.3 (1.1 to 4.81)	MODERATE
Anaemia: Major adverse cardiac event – Severe anaemia								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 4.7 (2.6 to 8.5)	MODERATE
WBC: Complications – Endovascular cohort								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.32 (1.11 to 1.58)	MODERATE
WBC: Complications – Open cohort								
1	Cohort study	Serious[a]	No serious	No serious	Serious[b]	None	Adjusted OR 0.97 (0.86 to 1.08)	LOW

Quality assessment							Adjusted effects	Quality
			inconsistency	indirectness				
WBC: Major adverse events – Endovascular cohort								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.67 (1.23 to 2.27)	MODERATE
WBC: Major adverse events – Open cohort								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Adjusted OR 1.07 (0.98 to 1.17)	LOW
WBC: Death – Endovascular cohort								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.82 (1.12 to 2.96)	MODERATE
WBC: Death – Open cohort								
1	Cohort study	Serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted OR 1.17 (1.05 to 1.3)	MODERATE

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5.2.4 Cancer surgery – white blood cell count

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Cancer-specific survival – WBC ≤9.5 versus >9.5								
1	Cohort study	Very serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	Adjusted HR 1.91 (1.1 to 3.32)	VERY LOW
Cancer-specific survival – WBC ≤10.0 versus >10.0								
1	Cohort study	Very serious[a]	No serious	Serious[b]	Serious[c]	None	Adjusted HR 1.56 (0.86 to 2.83)	VERY LOW

Quality assessment							Adjusted effects	Quality
			inconsistency					
Cancer-specific survival – WBC ≤11.0 versus >11.0								
1	Cohort study	Very serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	Adjusted HR 1.97 (1 to 3.88)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Indirect outcome: cancer-specific (rather than all-cause) mortality*
[c] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5.2.5 Cancer surgery – platelet count

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Overall survival – Platelet count ≤178 versus >178								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	Adjusted HR 1.54 (1.04 to 2.29)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.5.2.6 Non-cardiac surgery – platelet count

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Blood transfusion - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.76 (1.49 to 2.08)	LOW

Quality assessment							Adjusted effects	Quality
Blood transfusion - Mild thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.28 (1.18 to 1.39)	LOW
Blood transfusion - Low-normal thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.01 (0.96 to 1.06)	VERY LOW
Blood transfusion - Thrombocytosis								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.44 (1.3 to 1.6)	LOW
Mortality - Moderate-to-severe thrombocytopenia								
1	Cohort study	Very serious[d]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.93 (1.43 to 2.6)	VERY LOW
Mortality - Mild thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.31 (1.11 to 1.55)	LOW
Mortality - Low-normal thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.91 (0.8 to 1.04)	VERY LOW
Mortality - Thrombocytosis								
1	Cohort study	Very serious[d]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.94 (0.72 to 1.23)	VERY LOW
Mortality or major complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.52 (1.32 to 1.75)	LOW
Mortality or major complication - Mild thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.12 (1.04 to 1.21)	LOW

Quality assessment							Adjusted effects	Quality
Mortality or major complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1 (0.96 to 1.04)	VERY LOW
Mortality or major complication – Thrombocytosis								
1	Cohort study	Serious[a]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.36 (1.25 to 1.48)	LOW
Cardiac complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.02 (0.67 to 1.55)	VERY LOW
Cardiac complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.99 (0.81 to 1.21)	VERY LOW
Cardiac complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.08 (0.95 to 1.23)	VERY LOW
Cardiac complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.13 (0.84 to 1.52)	VERY LOW
Pulmonary complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.87 (1.5 to 2.33)	LOW
Pulmonary complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.08 (0.95 to 1.23)	VERY LOW
Pulmonary complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.06 (0.99 to 1.14)	VERY LOW

Quality assessment							Adjusted effects	Quality
Pulmonary complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.3 (1.12 to 1.51)	LOW
Renal complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 2.05 (1.48 to 2.84)	LOW
Renal complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.45 (1.2 to 1.75)	LOW
Renal complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.06 (0.92 to 1.22)	VERY LOW
Renal complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.48 (1.14 to 1.92)	LOW
CNS complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.73 (0.34 to 1.57)	VERY LOW
CNS complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.13 (0.85 to 1.5)	VERY LOW
CNS complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.01 (0.83 to 1.23)	VERY LOW
CNS complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.09 (0.69 to 1.72)	VERY LOW

Quality assessment							Adjusted effects	Quality
Sepsis complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.17 (0.92 to 1.49)	VERY LOW
Sepsis complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1 (0.89 to 1.12)	VERY LOW
Sepsis complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.95 (0.88 to 1.03)	VERY LOW
Sepsis complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.27 (1.12 to 1.44)	LOW
Wound complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.24 (0.97 to 1.59)	VERY LOW
Wound complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.11 (0.98 to 1.26)	VERY LOW
Wound complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 0.94 (0.88 to 1)	LOW
Wound complication – Thrombocytosis								
	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.49 (1.31 to 1.69)	LOW
Thromboembolic complication - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.08 (0.74 to 1.58)	VERY LOW

Quality assessment							Adjusted effects	Quality
Thromboembolic complication - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.09 (0.9 to 1.32)	VERY LOW
Thromboembolic complication - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.04 (0.93 to 1.16)	VERY LOW
Thromboembolic complication – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	No serious imprecision	None	OR 1.74 (1.43 to 2.12)	LOW
Graft failure - Moderate-to-severe thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.09 (0.55 to 2.16)	VERY LOW
Graft failure - Mild thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.81 (0.56 to 1.17)	VERY LOW
Graft failure - Low-normal thrombocytopenia								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 0.87 (0.7 to 1.08)	VERY LOW
Graft failure – Thrombocytosis								
1	Cohort study	Serious[e]	No serious inconsistency	Serious[b]	Serious[c]	None	OR 1.31 (0.91 to 1.89)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

[b] *Sample includes ASA status I-V patients but results are not stratified*

[c] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5.3 Kidney function tests (urea and electrolytes)

I.5.3.1 Vascular surgery – eGFR

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Postoperative mortality or stroke								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 3.7 (1.3 to 10.53)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.5.3.2 Endovascular repair of abdominal aortic aneurysm – eGFR

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Postoperative mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	RR 0.25 (0.03 to 2.32)	VERY LOW
Postoperative renal failure								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious[b]	None	OR 0.07 (0.03 to 0.21)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.5.3.3 Non-cardiac surgery – eGFR

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs, compared with stage 1	
Peri- or post-operative mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Stage 2: 0.8 (0.3-1.8) Stage 3a: 2.2 (0.9-5.4) Stage 3b: 2.8 (0.9-8.5) Stage 4: 11.3 (4.3-29.9) Stage 5: 5.8 (1.5-21.9)	VERY LOW
Peri- or post-operative MAACE								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious[b]	None	Stage 2: 1.5 (0.9-2.5) Stage 3a: 1.8 (0.9-3.5) Stage 3b: 3.9 (0.9-8.0) Stage 4: 4.8 (1.9-11.8) Stage 5: 3.9 (1.3-12.0)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.6 Glycated haemoglobin test

I.6.1 Diagnosed diabetes

I.6.1.1 Primary arteriovenous fistula failure

Quality assessment							Adjusted effects	Quality
Number of	Study	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Effect with 95% CIs	

Quality assessment							Adjusted effects	Quality
studies	design					considerations, including publication bias where possible		
Postoperative complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 2.78 (1.30, 5.94)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.6.1.2 Hip/joint arthroplasty

Quality assessment							Adjusted effects	Quality
Number of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations, including publication bias where possible	Effect with 95% CIs	
Periprothetic joint infection								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious	None	OR 0.86 (0.68, 1.09)	VERY LOW
Death								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 1.30 (1.08, 1.56)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.6.1.3 Non-cardiac surgery

Quality assessment							Adjusted effects	Quality
Number of	Study	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Effect with 95% CIs	

Quality assessment							Adjusted effects	Quality
studies	**design**					**considerations, including publication bias where possible**		
Periprothetic joint infection								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious	None	OR 2.13 (1.23, 3.69)	LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*

I.6.1.4 Joint arthroplasty

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
90 Day mortality								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious	None	OR 1.37 (0.82, 2.29)	VERY LOW
Number of complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 1.18 (0.97, 1.44)	VERY LOW
All complications								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 1.22 (1.01, 1.47)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*

I.6.2 Undiagnosed diabetes

Quality assessment							Adjusted effects	Quality
Number of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations, including publication bias where possible**	**Effect with 95% CIs**	
Periprothetic joint infection								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	No serious imprecision	None	OR 2.51 (1.07, 5.90)	LOW
Death								
1	Cohort study	Very serious[a]	No serious inconsistency	No serious indirectness	Serious imprecision	None	OR 2.02 (0.78, 5.24)	VERY LOW

[a] *Downgraded by 1 increment if the majority of the evidence was at high risk of bias and downgraded by 2 increments if the majority of the evidence was at very high risk of bias.*
[b] *Imprecision was considered serious if the confidence intervals crossed the null line*