Studies included in the systematic review by Badger et al.

Full citation	AJAX trial (results reported in multiple publications)
Study details	Study type: multicentre, non-blinded, randomised controlled trial Location: Netherlands Aim: to compare outcomes of EVAR with those of open repair in patients with a ruptured AAA Study dates: April 2004 to February 2011 Follow-up: 6 months Sources of funding: the study was partially funded by the Dutch Heart foundation
Participants	Population: patients with ruptured infrarenal AAA Sample size: 116; 85.3% male Inclusion criteria: people over 18 years with a clinical diagnosis of ruptured AAA accompanied by acute haemorrhage outside the aortic wall were included. Exclusion criteria: extension of the aneurysm to juxta- or suprarenal aorta, kidney transplant, horseshoe kidney, allergy to intravenous contrast, connective tissue disease, severe haemodynamic instability precluding computed tomography (CT) Baseline characteristics: Mean age: EVAR group, 74.9 years; Open surgery group, 74.5 years Sex: EVAR group, 86% male; Open surgery group, 85% male Mean aneurysm diameter: not reported Diabetes: EVAR group, 4%; Open surgery group, 2% Hypertension: EVAR group, 23%; Open surgery group, 17% Hyperlipidaemia: EVAR group, 23%; Open surgery group, 32% Renal disease: EVAR group, 2%; Open surgery group, 3% Pulmonary disease: EVAR group, 12%; Open surgery group, 5% Cardiac disease: EVAR group, 28%; Open surgery group, 24%
Intervention	EVAR
Comparison	Open surgical repair
Outcomes measures	All-cause mortality, severe complications, length of hospital and ICU stay, duration of intubation/ventilation and occurrence of endoleaks
Risk of bias assessment (from	1. Random sequence generation (selection bias): Low risk – randomisation was performed generated by and independent clinical research unit that allocated participants to groups on a 1:1 basis using random block sizes of 4 or 6

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the Cochrane review)	2. Allocation concealment (selection bias): Low risk – Allocations were concealed using sequentially numbered opaque sealed envelopes 3. Blinding of participants and personnel (performance bias): Low risk – it was not possible to blind participants but this was unlikely to bias results as objective outcomes were measured 4. Blinding of outcome assessment (detection bias): Low risk – double database entry was performed; adjudication and safety committees were blinded 5. Incomplete outcome data (attrition bias): Low risk – "All participants were accounted for in a CONSORT diagram; both treatment arms had similar dropout rates and reasons" 6. Selective reporting (reporting bias): Low risk – All pre-specified outcomes were reported 7. Other bias: Low risk – None Overall risk of bias: Low Directness: Directly applicable

Full citation	ECAR trial (results reported in multiple publications)
Study details	Study type: multicentre, non-blinded, randomised controlled trial Location: France Aim: to compare postoperative mortality between open surgical repair and EVAR for aorto-iliac abdominal aortic aneurysms in a homogeneous group of patients Study dates: 2008 to 2013 Follow-up: Up to 1 year Sources of funding: a grant obtained from the French Ministry of Health covered the cost of the study.
Participants	Population: patients with ruptured aorto-iliac AAA Sample size: 107; 90.7% male Inclusion criteria: patients with a CT confirmed ruptured aorto-iliac AAA with bleeding outside the aorto-iliac aneurysm wall were included. All patients had to be haemodynamically stable (systolic blood pressure >80mmHg unassisted by high-dose catacholamines) on arrival. Exclusion criteria: not reported Baseline characteristics: Mean age: EVAR group, 75.0 years; Open surgery group, 73.8 years Sex: EVAR group, 90.0% male; Open surgery group, 91.0% male Mean aneurysm diameter: not reported Comorbidities: not reported
Intervention	EVAR
Comparison	Open surgical repair
Outcomes measures	All-cause mortality, postoperative morbidity (cardiac, pulmonary, digestive, renal, and neurological), length of stay in ICU and complications.
Risk of bias assessment (from the Cochrane review)	1. Random sequence generation (selection bias): High risk – No randomisation was performed. Patients were allocated to groups by week; patients were treated by open repair during the first week and subsequent odd numbered weeks. 2. Allocation concealment (selection bias): High risk – Treatment assignment was based on weeks of the study. 3. Blinding of participants and personnel (performance bias): Low risk – It was not possible to blind participants but this was unlikely to bias results as objective outcomes were measured 4. Blinding of outcome assessment (detection bias): Low risk – Assessors were not blinded, but this is unlikely to affect outcomes

Full citation	ECAR trial (results reported in multiple publications)
	5. Incomplete outcome data (attrition bias): Low risk – All participants were accounted for; no participants were lost to follow-up 6. Selective reporting (reporting bias): 7. Other bias: All pre-specified outcomes were reported Overall risk of bias: Moderate Directness: Directly applicable

Full citation	Hinchcliffe 2006 trial (results reported in multiple publications)
Study details	Study type: single centre, non-blinded, randomised controlled trial Location: UK Aim: to test the hypothesis that EVAR can reduce the perioperative mortality associated with ruptured AAA compared with open repair Study dates: 1999 to 2004 Follow-up: 30 days Sources of funding: not reported
Participants	Population: patients with ruptured infrarenal AAA Sample size: 32; 75% male Inclusion criteria: patients with clinically and radiologically confirmed ruptured infrarenal AAA were included. Exclusion criteria: age <50 years, unconscious patients, allergy to radiological contrast, severe comorbidity that would preclude intensive care treatment following open repair; previous EVAR, women of childbearing potential not taking contraception and pregnant or lactating women Baseline characteristics: Mean age: EVAR group, 74 years; Open surgery group, 80 years Sex: EVAR group, 84% male; Open surgery group, 86% male Mean aneurysm diameter: not reported Ischaemic heart disease: EVAR group, 20%; Open surgery group, 29%

Full citation	Hinchcliffe 2006 trial (results reported in multiple publications)
	COPD: EVAR group, 0%; Open surgery group, 18% Peripheral vascular disease: EVAR group, 7%; Open surgery group, 12% Renal disease: EVAR group, 7%; Open surgery group, 12% Hypertension: EVAR group, 29%; Open surgery group, 47%
Intervention	EVAR
Comparison	Open surgical repair
Outcomes measures	30-day mortality and complications
Risk of bias assessment (from the Cochrane review)	1. Random sequence generation (selection bias): Unclear risk – Authors did not explicitly state how randomisation was performed 2. Allocation concealment (selection bias): Low risk – Randomisation was then performed from sealed opaque envelopes kept in the hospitals Accident and Emergency Department 3. Blinding of participants and personnel (performance bias): Low risk – It was not possible to blind participants but this was unlikely to bias results as objective outcomes were measured 4. Blinding of outcome assessment (detection bias): Low risk – Assessors were not blinded, but this is unlikely to affect outcomes 5. Incomplete outcome data (attrition bias): Low risk – All participants were accounted for, with numbers of cross-overs and dropouts reported in detail 6. Selective reporting (reporting bias): Low risk – most of the study protocol was outlined in the manuscript and all relevant outcomes were reported 7. Other bias: Unclear risk – The study was underpowered; 32 of the required 100 participants recruited Overall risk of bias: Low Directness: Directly applicable

Full citation	IMPROVE trial (results reported in multiple publications)
Study details	Study type: multicentre, non-blinded, randomised controlled trial Location: UK and Canada Aim: to assess whether EVAR versus open repair reduces mortality for people with suspected RAAA Study dates: 2002 to 2008 Follow-up: mean of 4.9 years Sources of funding: This project was funded by the UK National Institute for Health Research Health Technology Assessment programme
Participants	Population: patients with a ruptured AAA or ruptured aorto-iliac aneurysm Sample size: 613; 78.3% male Inclusion criteria: people over 50 years with a clinical diagnosis of ruptured AAA or ruptured aorto-iliac aneurysm were included Exclusion criteria: previous aneurysm repair, rupture of an isolated internal iliac aneurysm, aorto-caval or aorto-enteric fistulae, connective tissue disorders, anatomical features precluded EVAR, no absolute requirements will be set for the study, proximal neck morphology with a diameter >32 mm or a length <10 mm, iliac artery diameters <8 mm and >22 mm Baseline characteristics: Mean age: EVAR group, 76.0 years; Open surgery group, 76.2 years Sex: EVAR group, 81% male; Open surgery group, 80% male Mean aneurysm diameter: not reported Comorbidities: not reported
Intervention	EVAR
Comparison	Open surgical repair
Outcomes measures	All-cause mortality, costs, cost-effectiveness, and the need for re-intervention
Risk of bias assessment (from the Cochrane review)	1. Random sequence generation (selection bias): Low risk – An independent contractor performed telephone randomisation, assigning patients to groups on a 1:1 basis using computer-generated sequences 2. Allocation concealment (selection bias): Low risk – An independent contractor provided telephone randomisation, with computer generated assignation of patients 3. Blinding of participants and personnel (performance bias): Low risk – It was not possible to blind participants but this was unlikely to bias results as objective outcomes were measured

Full citation	IMPROVE trial (results reported in multiple publications)
	4. Blinding of outcome assessment (detection bias): Low risk – Data verification was performed centrally; it was unclear if there was blinding, but this was unlikely to influence outcomes 5. Incomplete outcome data (attrition bias): Low risk – All participants were accounted for, with numbers and reasons for dropouts reported in detail 6. Selective reporting (reporting bias): Low risk – All pre-specified outcomes were accounted for 7. Other bias: Low risk – None Overall risk of bias: Low Directness: Directly applicable