

Appendix C. Included Studies

Below is a list of included studies and their ancillary publications (indented below main results publication):

Key Questions 1 & 3

Chichester

Ashton HA, Gao L, Kim LG, et al. Fifteen-year follow-up of a randomized clinical trial of ultrasonographic screening for abdominal aortic aneurysms. *The British journal of surgery*. 2007;94(6):696-701. PMID: 17514666. <https://doi.org/10.1002/bjs.5780>.

Scott RA, Wilson NM, Ashton HA, et al. Influence of screening on the incidence of ruptured abdominal aortic aneurysm: 5-year results of a randomized controlled study. *The British journal of surgery*. 1995;82(8):1066-70. PMID: 7648155.

Scott RA, Bridgewater SG, Ashton HA. Randomized clinical trial of screening for abdominal aortic aneurysm in women. *The British journal of surgery*. 2002;89(3):283-5. PMID: 11872050. <https://doi.org/10.1046/j.0007-1323.2001.02014.x>.

Vardulaki KA, Walker NM, Couto E, et al. Late results concerning feasibility and compliance from a randomized trial of ultrasonographic screening for abdominal aortic aneurysm. *The British journal of surgery*. 2002;89(7):861-4. PMID: 12081734. <https://doi.org/10.1046/j.1365-2168.2002.02133.x>.

Multicentre Aneurysm Screening Study (MASS)

Thompson SG, Ashton HA, Gao L, et al. Final follow-up of the Multicentre Aneurysm Screening Study (MASS) randomized trial of abdominal aortic aneurysm screening. *The British journal of surgery*. 2012;99(12):1649-56. PMID: 23034729. <https://doi.org/10.1002/bjs.8897>.

Ashton HA, Buxton MJ, Day NE, et al. The Multicentre Aneurysm Screening Study (MASS) into the effect of abdominal aortic aneurysm screening on mortality in men: a randomised controlled trial. *Lancet*. 2002;360(9345):1531-9. PMID: 12443589.

Kim LG, Ra PS, Ashton HA, et al. A sustained mortality benefit from screening for abdominal aortic aneurysm. *Annals of internal medicine*. 2007;146(10):699-706. PMID: 17502630.

Kim LG, Scott RAP, Ashton HA, et al. A prolonged mortality benefit from screening for abdominal aortic aneurysm: seven-year follow-up of the MASS trial. *SO: The Vascular Society of Great Britain & Ireland Yearbook 2006*. 2006:77.

Thompson SG, Ashton HA, Gao L, et al. Screening men for abdominal aortic aneurysm: 10 year mortality and cost effectiveness results from the randomised Multicentre Aneurysm Screening Study. *BMJ*. 2009;338:b2307. PMID: 19553269.

Viborg

Lindholt JS, Sorensen J, Sogaard R, et al. Long-term benefit and cost-effectiveness analysis of screening for abdominal aortic aneurysms from a randomized controlled trial. *The British journal of surgery*. 2010;97(6):826-34. PMID: 20473995. <https://doi.org/10.1002/bjs.7001>.

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Lindholt JS, Juul S, Fasting H, et al. Hospital costs and benefits of screening for abdominal aortic aneurysms. Results from a randomised population screening trial. *Eur J Vasc Endovasc Surg*. 2002;23(1):55-60. PMID: 11748949. <https://doi.org/10.1053/ejvs.2001.1534>.

Lindholt JS, Juul S, Fasting H, et al. Screening for abdominal aortic aneurysms: single centre randomised controlled trial. *BMJ*. 2005;330(7494):750. PMID: 15757960. 10.1136/bmj.38369.620162.82

Lindholt JS, Juul S, Henneberg EW. High-risk and low-risk screening for abdominal aortic aneurysm both reduce aneurysm-related mortality. A stratified analysis from a single-centre randomised screening trial. *Eur J Vasc Endovasc Surg*. 2007;34(1):53-8. PMID: 17331750. <https://doi.org/10.1016/j.ejvs.2006.12.031>.

Lindholt JS, Juul S, Fasting H, et al. Preliminary ten year results from a randomised single centre mass screening trial for abdominal aortic aneurysm. *Eur J Vasc Endovasc Surg*. 2006;32(6):608-14. PMID: 16893663. <https://doi.org/10.1016/j.ejvs.2006.06.008>.

Western Australia

McCaul KA, Lawrence-Brown M, Dickinson JA, et al. Long-term Outcomes of the Western Australian Trial of Screening for Abdominal Aortic Aneurysms: Secondary Analysis of a Randomized Clinical Trial. *JAMA Intern Med*. 2016;176(12):1761-7. PMID: 27802493. <https://doi.org/10.1001/jamainternmed.2016.6633>.

Jamrozik K, Norman PE, Spencer CA, et al. Screening for abdominal aortic aneurysm: lessons from a population-based study. *Med J Aust*. 2000;173(7):345-50. PMID: 11062788.

Norman PE, Jamrozik K, Lawrence-Brown MM, et al. Western Australian randomized controlled trial of screening for abdominal aortic aneurysm. *The British journal of surgery*. 2003;90(4):492.

Norman PE, Jamrozik K, Lawrence-Brown MM, et al. Population based randomised controlled trial on impact of screening on mortality from abdominal aortic aneurysm. *BMJ*. 2004;329(7477):1259. PMID: 15545293. <https://doi.org/10.1136/bmj.38272.478438.55>.

Spencer CA, Norman PE, Jamrozik K, et al. Is screening for abdominal aortic aneurysm bad for your health and well-being? *ANZ J Surg*. 2004;74(12):1069-75. PMID: 15574151. <https://doi.org/10.1111/j.1445-1433.2004.03270.x>.

Key Question 2

d'Audiffret A, Santilli S, Tretinyak A, et al. Fate of the ectatic infrarenal aorta: expansion rates and outcomes. *Annals of vascular surgery*. 2002;16(5):534-6.

Devaraj S, Dodds SR. Ultrasound surveillance of ectatic abdominal aortas. *Ann R Coll Surg Engl*. 2008;90(6):477-82. PMID: 18765027. <https://doi.org/10.1308/003588408X301064>.

Lederle FA, Johnson GR, Wilson SE, et al. Yield of repeated screening for abdominal aortic aneurysm after a 4-year interval. Aneurysm Detection and Management Veterans Affairs Cooperative Study Investigators. *Arch Intern Med*. 2000;160(8):1117-21. PMID: 10789604.

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Oliver-Williams C, Sweeting MJ, Turton G, et al. Lessons learned about prevalence and growth rates of abdominal aortic aneurysms from a 25-year ultrasound population screening programme. *Br J Surg*. 2018;105(1):68-74. PMID: 29265406. <https://doi.org/10.1002/bjs.10715>.

Crow P, Shaw E, Earnshaw JJ, et al. A single normal ultrasonographic scan at age 65 years rules out significant aneurysm disease for life in men. *The British journal of surgery*. 2001;88(7):941-4. PMID: 11442524. <https://doi.org/10.1046/j.0007-1323.2001.01822.x>.

Darwood R, Earnshaw JJ, Turton G, et al. Twenty-year review of abdominal aortic aneurysm screening in men in the county of Gloucestershire, United Kingdom. *Journal of vascular surgery*. 2012;56(1):8-13. PMID: 22503187. <https://doi.org/10.1016/j.jvs.2011.12.069>.

Emerton ME, Shaw E, Poskitt K, et al. Screening for abdominal aortic aneurysm: a single scan is enough. *The British journal of surgery*. 1994;81(8):1112-3. PMID: 7953333.

McCarthy RJ, Shaw E, Whyman MR, et al. Recommendations for screening intervals for small aortic aneurysms. *The British journal of surgery*. 2003;90(7):821-6. PMID: 12854107. <https://doi.org/10.1002/bjs.4216>.

Chichester

Scott RA, Vardulaki KA, Walker NM, et al. The long-term benefits of a single scan for abdominal aortic aneurysm (AAA) at age 65. *Eur J Vasc Endovasc Surg*. 2001;21(6):535-40. PMID: 11397028. <https://doi.org/10.1053/ejvs.2001.1368>.

Soderberg P, Wanhainen A, Svensjo S. Five Year Natural History of Screening Detected Sub-Aneurysms and Abdominal Aortic Aneurysms in 70 Year Old Women and Systematic Review of Repair Rate in Women. *Eur J Vasc Endovasc Surg*. 2017;53(6):802-9. PMID: 28389251. <https://dx.doi.org/10.1016/j.ejvs.2017.02.024>.

Svensjo S, Bjorck M, Wanhainen A. Editor's choice: five-year outcomes in men screened for abdominal aortic aneurysm at 65 years of age: a population-based cohort study. *European journal of vascular and endovascular surgery : the official journal of the European Society for Vascular Surgery*. 2014;47(1):37-44. PMID: 24262320. <https://dx.doi.org/10.1016/j.ejvs.2013.10.007>.

Additional studies for Key Question 3 (only included for screening harms)

Lesjak M, Boreland F, Lyle D, et al. Screening for abdominal aortic aneurysm: does it affect men's quality of life? *Aust J Prim Health*. 2012. PMID: 22951209. <https://doi.org/10.1071/PY11131>.

Viborg Vascular (VIVA)

Lindholt JS, Sogaard R. Population screening and intervention for vascular disease in Danish men (VIVA): a randomised controlled trial. *Lancet*. 2017. PMID: 28859943. [https://dx.doi.org/10.1016/s0140-6736\(17\)32250-x](https://dx.doi.org/10.1016/s0140-6736(17)32250-x).

Grondal N, Sogaard R, Lindholt JS. Baseline prevalence of abdominal aortic aneurysm, peripheral arterial disease and hypertension in men aged 65-74 years from a population screening study (VIVA trial). *Br J Surg*. 2015;102(8):902-6. PMID: 25923784. <https://dx.doi.org/10.1002/bjs.9825>.

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Lucarotti ME, Heather BP, Shaw E, et al. Psychological morbidity associated with abdominal aortic aneurysm screening. *Eur J Vasc Endovasc Surg*. 1997;14(6):499-501. PMID: 9467527.

Wanhainen A, Rosen C, Rutegard J, et al. Low quality of life prior to screening for abdominal aortic aneurysm: a possible risk factor for negative mental effects. *Annals of vascular surgery*. 2004;18(3):287-93. PMID: 15354629. <https://doi.org/10.1007/s10016-004-0021-x>.

Key Questions 4 & 5

Open vs. Surveillance

ADAM

Lederle FA, Wilson SE, Johnson GR, et al. Immediate repair compared with surveillance of small abdominal aortic aneurysms. *N Engl J Med*. 2002;346(19):1437-44. PMID: 12000813. <https://doi.org/10.1056/NEJMoa012573>.

Lederle FA, Wilson SE, Johnson GR, et al. Design of the abdominal aortic Aneurysm Detection and Management Study. ADAM VA Cooperative Study Group. *Journal of vascular surgery*. 1994;20(2):296-303. PMID: 8040955.

Filardo G, Lederle FA, Ballard DJ, et al. Immediate open repair vs surveillance in patients with small abdominal aortic aneurysms: survival differences by aneurysm size. *Mayo Clin Proc*. 2013;88(9):910-9. PMID: 24001483. <https://dx.doi.org/10.1016/j.mayocp.2013.05.014>.

UKSAT

Powell JT, Brown LC, Forbes JF, et al. Final 12-year follow-up of surgery versus surveillance in the UK Small Aneurysm Trial. *Br J Surg*. 2007;94(6):702-8. PMID: 17514693. <https://doi.org/10.1002/bjs.5778>.

Brown LC, Powell JT. Risk factors for aneurysm rupture in patients kept under ultrasound surveillance. UK Small Aneurysm Trial Participants. *Ann Surg*. 1999;230(3):289-96; discussion 96-7. PMID: 10493476.

Brown LC, Thompson SG, Greenhalgh RM, et al. Fit patients with small abdominal aortic aneurysms (AAAs) do not benefit from early intervention. *J Vasc Surg*. 2008;48(6):1375-81. PMID: 19118733. <https://doi.org/10.1016/j.jvs.2008.07.014>

Fowkes FG, Greenhalgh RM, Powell JT, et al. Length of hospital stay following elective abdominal aortic aneurysm repair. U.K. Small Aneurysm Trial Participants. *Eur J Vasc Endovasc Surg*. 1998;16(3):185-91. PMID: 9787298.

Greenhalgh RM, Forbes JF, Fowkes FG, et al. The UK Small Aneurysm Trial: design, methods and progress. *Eur J Vasc Endovasc Surg*. 1995;9(1):42-8. PMID: 7664011.

Powell JT. Long-term outcomes of immediate repair compared with surveillance of small abdominal aortic aneurysms. *N Engl J Med*. 2002;346(19):1445-52. PMID: 12000814. <https://doi.org/10.1056/NEJMoa013527>.

Appendix C. Included Studies

Powell JT, Brady AR, Brown LC, et al. Mortality results for randomised controlled trial of early elective surgery or ultrasonographic surveillance for small abdominal aortic aneurysms. The UK Small Aneurysm Trial Participants. *Lancet*. 1998;352(9141):1649-55. PMID: 9853436.

Filardo G, Lederle FA, Ballard DJ, et al. Immediate open repair vs surveillance in patients with small abdominal aortic aneurysms: survival differences by aneurysm size. *Mayo Clin Proc*. 2013;88(9):910-9. PMID: 24001483. <https://dx.doi.org/10.1016/j.mayocp.2013.05.014>.

EVAR vs. Surveillance

CAESAR

Cao P, De RP, Verzini F, et al. Comparison of surveillance versus aortic endografting for small aneurysm repair (CAESAR): results from a randomised trial. *European journal of vascular and endovascular surgery : the official journal of the European Society for Vascular Surgery*. 2011;41(1):13-25. PMID: 20869890. <https://doi.org/10.1016/j.ejvs.2010.08.026>

Cao P. Comparison of surveillance vs aortic endografting for small aneurysm repair (CAESAR) trial: study design and progress. *Eur J Vasc Endovasc Surg*. 2005;30(3):245-51. PMID: 16130206.

PIVOTAL

Ouriel K, Clair DG, Kent KC, et al. Endovascular repair compared with surveillance for patients with small abdominal aortic aneurysms. *Journal of vascular surgery*. 2010;51(5):1081-7. PMID: 20304589. <https://doi.org/10.1016/j.jvs.2009.10.113>

Ouriel K. The PIVOTAL study: A randomized comparison of endovascular repair versus surveillance in patients with smaller abdominal aortic aneurysms. *Journal of vascular surgery*. 2009;49(1):266-9. PMID: 19174266. <https://doi.org/10.1016/j.jvs.2008.11.048>.

Pharmacotherapy vs. Placebo

Bicknell CD, Kiru G, Falaschetti E, et al. An evaluation of the effect of an angiotensin-converting enzyme inhibitor on the growth rate of small abdominal aortic aneurysms: a randomized placebo-controlled trial (AARDVARK). *European heart journal*. 2016;37(42):3213-21. PMID: 27371719. <https://doi.org/10.1093/eurheartj/ehw257>.

Kiru G, Bicknell C, Falaschetti E, et al. An evaluation of the effect of an angiotensin-converting enzyme inhibitor on the growth rate of small abdominal aortic aneurysms: a randomised placebo-controlled trial (AARDVARK). *Health technology assessment (Winchester, England)*. 2016;20(59):1-180. PMID: 27488944. <https://dx.doi.org/10.3310/hta20590>.

Karlsson L, Gnarp J, Bergqvist D, et al. The effect of azithromycin and Chlamydia pneumonia infection on expansion of small abdominal aortic aneurysms—a prospective randomized double-blind trial. *Journal of vascular surgery*. 2009;50(1):23-9. PMID: 19563951. <https://doi.org/10.1016/j.jvs.2008.12.048>.

Hogh A, Vammen S, Ostergaard L, et al. Intermittent roxithromycin for preventing progression of small abdominal aortic aneurysms: long-term results of a small clinical trial. *Vasc Endovascular Surg*. 2009;43(5):452-6. PMID: 19640922. <https://doi.org/10.1177/1538574409335037>.

Appendix C. Included Studies

Vammen S, Lindholt JS, Ostergaard L, et al. Randomized double-blind controlled trial of roxithromycin for prevention of abdominal aortic aneurysm expansion. *The British journal of surgery*. 2001;88(8):1066-72. PMID: 11488791. <https://doi.org/10.1046/j.0007-1323.2001.01845.x>.

Hogh A, Vammen S, Joensen J, et al., editors. Intermittent Roxithromycin Treatment for Preventing Small Abdominal Aortic Aneurysms Progression. Long Term Results from a Small Randomised Double-blinded Clinical Controlled Trial 2008 2008. PMID: None.

Meijer C, Stijnen T, Wasser M, et al. Doxycycline for stabilization of abdominal aortic aneurysms: A randomized trial. *Annals of internal medicine*. 2013;159(12):815-23. PMID: 24490266. <https://doi.org/10.7326/0003-4819-159-12-201312170-00007>.

Mosorin M, Juvonen J, Biancari F, et al. Use of doxycycline to decrease the growth rate of abdominal aortic aneurysms: a randomized, double-blind, placebo-controlled pilot study. *Journal of vascular surgery*. 2001;34(4):606-10. PMID: 11668312. <https://doi.org/10.1067/mva.2001.117891>.

Propranolol Aneurysm Trial Investigators. Propranolol for small abdominal aortic aneurysms: results of a randomized trial. *Journal of vascular surgery*. 2002;35(1):72-9. PMID: 11802135.

Sillesen H, Eldrup N, Hultgren R, et al. Randomized clinical trial of mast cell inhibition in patients with a medium-sized abdominal aortic aneurysm. *The British journal of surgery*. 2015;102(8):894-901. PMID: 25963302. <https://doi.org/10.1002/bjs.9824>

Additional studies for Key Question 5 (only included for treatment harms)

Open vs. Surveillance

ADAM

Lederle FA, Johnson GR, Wilson SE, et al. Quality of life, impotence, and activity level in a randomized trial of immediate repair versus surveillance of small abdominal aortic aneurysm. *Journal of vascular surgery*. 2003;38(4):745-52. PMID: 14560224.

UKSAT

Forbes JF, Brady AR, Brown LC, et al. Health service costs and quality of life for early elective surgery or ultrasonographic surveillance for small abdominal aortic aneurysms. UK Small Aneurysm Trial Participants. *Lancet*. 1998;352(9141):1656-60. PMID: 9853437.

EVAR vs. Surveillance

CAESAR

De Rango P, Verzini F, Parlani G, et al. Quality of life in patients with small abdominal aortic aneurysm: the effect of early endovascular repair versus surveillance in the CAESAR trial. *Eur J Vasc Endovasc Surg*. 2011;41(3):324-31. PMID: 21145269. <https://doi.org/10.1016/j.ejvs.2010.11.005>.

PIVOTAL

Eisenstein EL, Davidson-Ray L, Edwards R, et al. Economic analysis of endovascular repair versus surveillance for patients with small abdominal aortic aneurysms. *Journal of vascular surgery*. 2013;58(2):302-10. PMID: 23562339. <https://dx.doi.org/10.1016/j.jvs.2013.01.038>.

Appendix C. Included Studies

Pharmacotherapy vs. Placebo

Lindholt JS, Henneberg EW, Juul S, et al. Impaired results of a randomised double blinded clinical trial of propranolol versus placebo on the expansion rate of small abdominal aortic aneurysms. *International angiology : a journal of the International Union of Angiology*. 1999;18(1):52-7. PMID: 10392481.

Surgical Registries

VASCUNET

Budtz-Lilly J, Venermo M, Debus S, et al. Editor's Choice - Assessment of International Outcomes of Intact Abdominal Aortic Aneurysm Repair over 9 Years. *Eur J Vasc Endovasc Surg*. 2017;54(1):13-20. PMID: 28416191. <https://dx.doi.org/10.1016/j.ejvs.2017.03.003>

ASERNIP-S

Golledge J, Parr A, Boulton M, et al. The outcome of endovascular repair of small abdominal aortic aneurysms. *Ann Surg*. 2007;245(2):326-33. PMID: 17245188.
<https://doi.org/10.1097/01.sla.0000253965.95368.52>.

VSGNE

Lo RC, Bensley RP, Hamdan AD, et al. Gender differences in abdominal aortic aneurysm presentation, repair, and mortality in the Vascular Study Group of New England. *Journal of vascular surgery*. 2013;57(5):1261-8, 8.e1-5. PMID: 23384493. <https://dx.doi.org/10.1016/j.jvs.2012.11.039>

ACS NSQIP

Overbey DM, Glebova NO, Chapman BC, et al. Morbidity of endovascular abdominal aortic aneurysm repair is directly related to diameter. *Journal of vascular surgery*. 2017;66(4):1037-47. PMID: 28433338. <https://dx.doi.org/10.1016/j.jvs.2017.01.058>

EUROSTAR

Peppelenbosch N, Buth J, Harris PL, et al. Diameter of abdominal aortic aneurysm and outcome of endovascular aneurysm repair: does size matter? A report from EUROSTAR. *Journal of vascular surgery*. 2004;39(2):288-97. PMID: 14743127. <https://doi.org/10.1016/j.jvs.2003.09.047>.