Women's AAA Should **NOT** be Repaired Starting at 4.5cm

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Presenter Disclosure

- I am a straight white male

ARGUMENT 1 : LACK OF CURRENT LITERATURE

GUIDELINES

ESVS Guidelines 2024

Recommendation 23			Changed
Women with an abdominal aortic aneurysm ≥ 50 mm may be considered for elective repair.			
Class	**Level**	**References**	**ToE**
IIb	C	Bown *et al.* (2013),[106] Sweeting *et al.* (2012),[210] Brown and Powell (1999),[260] Grootenboer *et al.* (2010),[262] Ulug *et al.* (2017)[264]	

SVS Guidelines 2018

We suggest repair in women with AAA between 5.0 cm and 5.4 cm in maximum diameter.

Level of recommendation	2 (Weak)
Quality of evidence	B (Moderate)

ARGUMENT 1 : LACK OF CURRENT LITERATURE

GUIDELINES

Recommendation 21		New
Women with an asymptomatic abdominal aortic aneurysm < 50 mm are not recommended for elective repair.		
Class	**Level**	**References**
III	C	Consensus

ARGUMENT 1 : LACK OF CURRENT LITERATURE

MAJOR TRIALS

- 4 Major Trials : 4.0 to 5.5cm
  - Except PIVOTAL : 4.0 to 5.0cm
- Cochrane review

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (RCTs)	Certainty of the evidence (GRADE)
	Risk with ultrasound surveillance	Risk with early repair			
Mortality (follow-up to 6 years)	**Study population**		**HR 0.99** (CI 0.83 to 1.18)[a]	2226 (2 RCTs)	⊕⊕⊕⊕ **High**
	0.28 (0.25 to 0.31)	0.30 (0.27 to 0.33)			
Mortality (follow-up at 1 year)	See comment		**RR 1.92** (0.73 to 5.06)[a]	846 (2 RCTs)	⊕⊕⊖⊖ **Low** [b]

- Open vs Surveillance : UKSAT and ADAM
- EVAR vs Surveillance : CAESAR and PIVOTAL

ARGUMENT 1 : LACK OF CURRENT LITERATURE

MAJOR TRIALS

- Open vs Surveillance Trials
  - ADAM Women Prevalence : <1%
  - UKSAT Women Prevalence : 17%

Overall Mortality in UKSAT Trial

	Surveillance	Early surgery	HR	p-value
Women	7.9%	7.7%	1.16	0.42
Men	7.3%	6.8%	0.9	

- EVAR vs Surveillance Trials
  - CAESAR Women Prevalence : 4.2%
  - PIVOTAL Women Prevalence : 13%

ARGUMENT 1 : LACK OF CURRENT LITERATURE

RUPTURE RATE

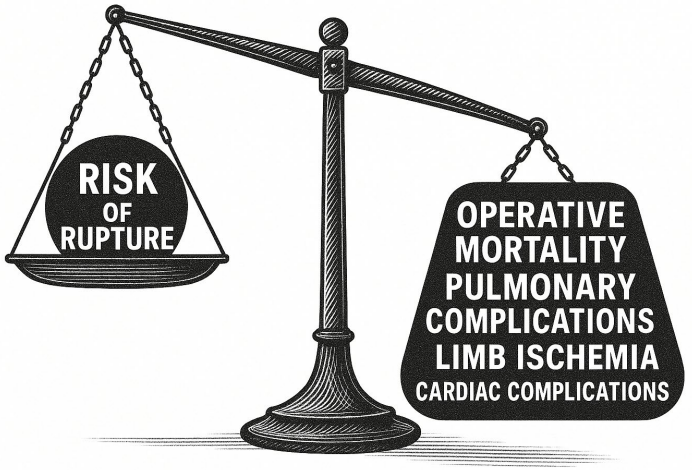
- Bonus – ***Clickbait data***
- RESCAN meta-analysis 2013 on **rupture rates**

Women had a 4-fold greater rupture risk for all AAA sizes and reached a rupture risk of greater than 1% in a much shorter time than men (**Table 1**).

Which is still….

Rupture rate = **1.47%** at 4.5cm

Not equivalent of mortality



ARGUMENT 2 – UNNECESSARY SURGICAL RISKS

OPERATIVE MORTALITY

- Operative mortality is higher in Women

Br J Surg, 2010

Systematic review and meta-analysis of sex differences in outcome after intervention for abdominal aortic aneurysm

N. Grootenboer[1,5], M. R. H. M. van Sambeek[5], L. R. Arends[2,4], J. M. Hendriks[3], M. G. M. Hunink[1] and J. L. Bosch[1]

Morphological suitability for endovascular repair, non-intervention rates, and operative mortality in women and men assessed for intact abdominal aortic aneurysm repair: systematic reviews with meta-analysis

Lancet, 2017

*Pinar Ulug, Michael J Sweeting, Regula S von Allmen, Simon G Thompson, Janet T Powell, on behalf of the SWAN collaborators**

EJVS, 2021

Editor's Choice – Systematic Review and Meta-Analysis of Sex Specific Differences in Adverse Events After Open and Endovascular Intact Abdominal Aortic Aneurysm Repair: Consistently Worse Outcomes for Women

Anna L. Pouncey [a,*], Michael David [b], Rachael I. Morris [c], Pinar Ulug [a], Guy Martin [a], Colin Bicknell [a], Janet T. Powell [a]

ARGUMENT 2 – UNNECESSARY SURGICAL RISKS

OPERATIVE MORTALITY

Grootenboer et al, 2010

Mortality rate

	Women	Men
Open	7.6%	5.1%
EVAR	2.9%	1.5%

Systematic review and meta-analysis of sex differences in outcome after intervention for abdominal aortic aneurysm

N. Grootenboer[1,5], M. R. H. M. van Sambeek[5], L. R. Arends[2,4], J. M. Hendriks[3], M. G. M. Hunink[1] and J. L. Bosch[1]

Ulug et al, 2017

- Less Women eligible for EVAR :
- 34% vs 54% in men

Mortality rate

	Women	Men
Open	5.4%	2.8%
EVAR	2.3%	1.4%

Morphological suitability for endovascular repair, non-intervention rates, and operative mortality in women and men assessed for intact abdominal aortic aneurysm repair: systematic reviews with meta-analysis

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ARGUMENT 2 – UNNECESSARY SURGICAL RISKS

SURGICAL RISK

- Pouncey et al, 2021

Editor's Choice – Systematic Review and Meta-Analysis of Sex Specific Differences in Adverse Events After Open and Endovascular Intact Abdominal Aortic Aneurysm Repair: Consistently Worse Outcomes for Women

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Complication	Procedure	Odds Ratio (OR) [95% CI]
30-day Mortality	OAR	1.49 [1.37 – 1.61]
	EVAR	1.86 [1.59 – 2.17]
Transfusion	OAR	1.81 [1.60 – 2.04]
	EVAR	2.18 [2.08 – 2.29]
Pulmonary Complications	OAR	1.40 [1.28 – 1.53]
	EVAR	1.44 [1.17 – 1.77]
Bowel Ischaemia	OAR	1.54 [1.36 – 1.75]
	EVAR	1.99 [1.51 – 2.62]
Arterial Injury	EVAR	3.02 [1.62 – 5.65]
Limb Ischaemia	EVAR	2.13 [1.48 – 3.06]
Renal Complications	EVAR	1.46 [1.22 – 1.72]
Cardiac Complications	EVAR	1.19 [1.03 – 1.37]

Take-Home Message

No clear survival advantage at 4.5cm

Increased surgical risks without benefits

More trials are needed to optimize Women's outcomes

The Women's Aneurysm Research: Repair Immediately or Routine Surveillance (WARRIORS) trial

LET WOMEN LIVE AND NOT JUST SURVIVE

Is it always worth it – and is it worth it early?

ELSEVIER

European Journal of Vascular and Endovascular Surgery

Volume 59, Issue 3, March 2020, Pages 420-427

Systematic Review

Systematic Review and Meta-Analysis of Health Related Quality of Life and Reported Experiences in Patients With Abdominal Aortic Aneurysm Under Ultrasound Surveillance

Linda Lyttkens [a], Anders Wanhainen [a], Sverker Svensjö [a b c], Rebecka Hultgren [d], Martin Björck [a], Eva Jangland [a]

ELSEVIER

Journal of Vascular Surgery

Volume 56, Issue 2, August 2012, Pages 520-527.e1

Review article

Questions remain about quality of life after abdominal aortic aneurysm repair

George Peach MRCS, Peter Holt PhD, FRCS, Ian Loftus MD, FRCS, Matt M. Thompson MD, FRCS, Robert Hinchliffe MD, FRCS

JOURNAL ARTICLE

Meta-analysis of prospective trials determining the short- and mid-term effect of elective open and endovascular repair of abdominal aortic aneurysms on quality of life

P A Coughlin, D Jackson, A D White, M A Bailey, C Farrow, D J A Scott, S J Howell

British Journal of Surgery, Volume 100, Issue 4, March 2013, Pages 448–455, https://doi-org.acces.bibl.ulaval.ca/10.1002/bjs.9018

Published: 01 March 2013 **Article history**

Quality of life and symptoms worsen over time with repair

CALGARY TYPICAL PATIENT

QUEBEC TYPICAL PATIENT

THANK YOU