

Authors	Measured Outcome	Control group baseline	Training group baseline	Third group baseline	Control group after intervention	Training group after intervention	Third group after intervention	Control group after intervention and delay	Training group after intervention and delay
Woolster M, et al. ²¹	Contrast volume (mL)				Mean 76.9; Range 38.0-120.0	Mean 59.2; Range 29.0-108.0			
	Fluoroscopy time (min)				Mean 19.4; Range 9.8-36.0	Mean 11.4; Range 5.4-19.8			
	Operative time (min)				Mean 42.5; Range 30.9-60.0	Mean 31.9; Range 14.3-64.0			
	Time to catheter cannulation (min)				Mean 23.3; Range 13.4-30.5	Mean 17.0; Range 7.2-30.1			
	Cardiac sheath duration (min)				Mean 19.2; Range 11.8-26.5	Mean 14.9; Range 6.1-23.9			
	Global rating scale (0-40)				Mean 23.1; SD 2.2	Mean 39.4; SD 2.1	Mean 28.4; SD 2.2		
	Examiner checklist (0-72)				Mean 38.7; SD 3.4	Mean 63.5; SD 3.2	Mean 53.6; SD 3.3		
	Supervisor take-overs				Mean 4.2; SD 0.5	Mean 0.3; SD 0.5	Mean 3.4; SD 0.5		
	Operative time (min)				Mean 42.6; SD 7.5	Mean 51.3; SD 7.1	Mean 53.2; SD 7.5		
	Fluoroscopy time (min)				Mean 11.4; SD 1.5	Mean 12.0; SD 1.4	Mean 14.4; SD 1.5		
Maertens H, et al. ⁴¹	Number of angiograms				Mean 61.8; SD 0.4	Mean 44.1; SD 3.8	Mean 61.3; SD 0.0		
	DAP				Mean 10.6; SD 3.5	Mean 9.0; SD 3.3	Mean 15.0; SD 3.4		
	Contrast volume (mL)				Mean 71.4; SD 9.7	Mean 65.1; SD 9.2	Mean 78.8; 9.6		
	Peri-operative complications (0-42)				252 (3.5%)	252 (3.5%)	452 (6.7%)		
	In-hospital minor adverse effects (0-58)				158 (0.7%)	158 (0.7%)	158 (1.7%)		
	In-hospital major adverse effects (0-58)				158 (1.7%)	158 (1.7%)	158 (1.7%)		
	30-day minor adverse effects (0-58)				358 (1.5%)	058 (0.0%)	158 (1.7%)		
	30-day major adverse effects (0-58)				158 (1.7%)	058 (0.0%)	058 (0.0%)		
	BOSATS score					Median 63; IQR 61-68			
	Global rating scale (7-35)				Median 26; IQR 26-31	Median 29; IQR 26-31			
Zevin B, et al. ³⁶	Procedure specific scale (7-35)				Median 26; IQR 23-29	Median 27; IQR 24-30			
	Observational teamwork assessment for surgery tool, surgical team (0-30)				Median 17; IQR 12-22	Median 18; IQR 16-24			
	Observational teamwork assessment for surgery tool, nursing team (0-30)				Median 18; IQR 15-22	Median 16; IQR 14-22			
	Operative time (min)				Mean 54.6; 95% CI 48.4-61.6	Mean 52.1; 95% CI 46.2-58.8			
	Fluoroscopy time (sec)				Mean 664; 95% CI 720-1037	Mean 916; 95% CI 763-1099			
	Contrast volume (mL)				Mean 83; 95% CI 84-104	Mean 81; 95% CI 79-91			
	Number of angiograms until deployment of main body				Mean 2.8; 95% CI 2.5-3.2	Mean 2.2; 95% CI 1.9-2.4			
	Number of angiograms until deployment of all stent grafts				Mean 5.4; 95% CI 4.8-6.0	Mean 4.3; 95% CI 3.8-4.8			
	Total number of angiograms				Mean 7.5; 95% CI 6.7-8.2	Mean 6.5; 95% CI 5.9-7.2			
	Radiation dose, nGy/cm ²				Mean 112.9; 95% CI 86.5-147.4	Mean 104.0; 95% CI 78.7-135.7			
Desender L, et al. ²⁹	Minor errors, complete procedure				Mean 4.2; 95% CI 3.7-4.9	Mean 3.1; 95% CI 2.7-3.7			
	Minor errors, endovascular part				Mean 3.8; 95% CI 3.3-4.4	Mean 3.0; 95% CI 2.6-3.5			
	Major errors, complete procedure				Mean 0.3; 95% CI 0.2-0.6	Mean 0.1; 95% CI 0.0-0.2			
	Major errors, endovascular part				Mean 0.2; 95% CI 0.1-0.4	Mean 0.0; 95% CI 0.0-0.2			
	Total errors, endovascular part				Mean 4.0; 95% CI 3.5-4.6	Mean 3.1; 95% CI 2.6-3.6			
	Total errors, non-endovascular part				Mean 0.5; 95% CI 0.4-0.8	Mean 0.2; 95% CI 0.1-0.3			
	Errors without delay				Mean 1.2; 95% CI 0.9-1.6	Mean 0.8; 95% CI 0.6-1.1			
	Errors causing delay				Mean 3.4; 95% CI 2.9-3.9	Mean 2.5; 95% CI 2.1-2.9			
	Technical success, primary				39/50 (78%)	41/50 (82%)			
	Technical success, assisted primary				43/50 (86%)	47/50 (94%)			
Nilsson C, et al. ¹⁷	Technical success, secondary				46/50 (92%)	47/50 (94%)			
	Clinical success, primary				49/50 (98%)	45/50 (90%)			
	Clinical success, assisted primary				49/50 (98%)	47/50 (94%)			
	Clinical success, secondary				45/50 (90%)	46/50 (92%)			
Waltman BR, et al. ¹⁷	In-hospital mortality (0-50)				150 (2%)	050 (0%)			
	30-day mortality (0-50)				150 (2%)	250 (4%)			
	OSA/CNS (5-25)				Mean 14.3; 95% CI 11.9-16.6	Mean 14.0; 95% CI 11.9-16.1	Mean 12.3; 95% CI 10.7-14.0		
	ASSET (8-38)	Mean 19.1; SD 1.5	Mean 19.3; SD 1.5	Mean 21.3; SD 1.5	Mean 20.2; SD 1.6	Mean 22.5; SD 1.5	Mean 22.5; SD 1.5		
Shore EM, et al. ¹⁸	ASSET safety (1-5)	Mean 3.0; SD 0.2	Mean 2.8; SD 0.2	Mean 3.0; SD 0.2	Mean 3.0; SD 0.2	Mean 3.3; SD 0.2			
	Anatomic checklist (0-14)	Mean 11.0; SD 1.7	Mean 10.7; SD 1.7	Mean 11.4; SD 2.3	Mean 11.4; SD 2.3	Mean 11.2; SD 3.2			
	Operative time (sec)	Mean 297.3; SD 153.6	Mean 284.7; SD 127.8	Mean 232.0; SD 106.0	Median 30.0; IQR 27-35	Median 34.0; IQR 32-29.3			
	OSALS (10-50)				111 (65.5%)	81.0 (80%)			
Patel NR, et al. ¹⁶	Completed intracorporeal knot				Median 12.0	Median 12.5			
	Knot tying global rating scale (5-20)				Median 450.0	Median 472.5			
	Time required to complete knot (sec)				Mean 29.2; SD 10.1	Mean 29.8; SD 9.8			
	OSATS (0-40)	Mean 26.6; SD 10.8	Mean 26.7; SD 10.6	Mean 21.2; SD 10.6	Mean 21.2; SD 10.6	Mean 22.5; SD 7.2			
Dunn JC, et al. ¹⁶	ASSET (8-38)	Mean 19.1; SD 6.6	Mean 19.3; SD 6.7	Mean 21.3; SD 6.7	Mean 21.2; SD 7.2	Mean 22.5; SD 7.2			
	ASSET safety (1-5)	Mean 2.9; SD 0.9	Mean 2.8; SD 0.8	Mean 3.0; SD 0.9	Mean 3.0; SD 0.9	Mean 3.3; SD 1.1			
	Anatomic checklist (0-14)	Mean 11.0; SD 1.7	Mean 10.7; SD 1.4	Mean 11.4; SD 1.0	Mean 11.4; SD 1.0	Mean 11.2; SD 3.2			
	Operative time (min)	Mean 5.0; SD 2.6	Mean 4.9; SD 2.1	Mean 3.9; SD 1.8	Mean 3.9; SD 1.8	Mean 3.4; SD 1.8			
Peltan ID, et al. ²⁹	Cannulation success on first attempt				23/38 (60.5%)	29/49 (59.2%)			
	Overall cannulation success				34/38 (89.5%)	45/49 (91.8%)			
	Needle passes required				Mean 1.64; SD 1.11	Mean 1.57; SD 1.02			
	Global assessment score (1-5)				Mean 2.9; SD 1.1	Mean 3.1; SD 1.1			
	Arterial puncture				5.4%	4.1%			
	Hematoma				5.3%	10.2%			
	Catheter malposition				6.1%	11.4%			
	Catheter associated infection				3.2%	2.8%			
	Pneumothorax				0.0%	0.0%			
	Death				0.0%	0.0%			
Grover SG, et al. ^{40a}	Average procedural protocol adherence				Mean 93%; 95% CI 90%-97%	Mean 82%; 95% CI 74%-91%			
	JAG DOPS				NA	NA			
	Global rating scale (8-40)	Mean 23.4; 95% CI 19.4-27.3	Mean 22.5; 95% CI 20.4-26.3	Mean 21.7; 95% CI 17.3-26.1	Mean 21.7; 95% CI 17.3-26.1	Mean 26.9; 95% CI 23.4-30.4			
	Operative time (min)	Mean 52.2; 95% CI 39.3-65.3	Mean 45.7; 95% CI 33.4-58.0	Mean 41.3; 95% CI 30.3-43.3	Mean 40.1; 95% CI 33.3-47.2	Mean 40.1; 95% CI 33.3-47.2			
Carlsen AD, et al. ⁴⁰	Insertion depth (cm)	Mean 29.4; 95% CI 22.6-36.2	Mean 36.5; 95% CI 30.3-42.7	Mean 36.6; 95% CI 31.4-46.1	Mean 60.5; 95% CI 51.8-69.1				
	Number of local intubations	0	0	1					
	Operative time, raw (min)	Mean 40.5; SD 3.4	Mean 41.5; SD 3.8	Mean 37.4; SD 3.8	Mean 30.9; SD 7.3	Mean 36.7; SD 7.6			
	Operative time, adjusted for participation (min)	Mean 53.5; SD 14.6	Mean 54.5; SD 17.0	Mean 47.5; SD 13.9	Mean 34.4; SD 8.4	Mean 44.2; SD 12.9			
Zendejas B, et al. ¹⁴	Resident participation	Mean 68%; SD 18%	Mean 69%; SD 18%	Mean 73%; SD 16.4%	Mean 88.4%; SD 9.4%	Mean 77.1%; SD 16.2%			
	GOALS (6-30)	Mean 17.4; SD 4.0	Mean 17.5; SD 3.8	Mean 18.3; SD 3.8	Mean 21.9; SD 2.7	Mean 18.7; SD 3.8			
	Peritoneal tear	4/36 (11.1%)	4/40 (10%)	9/37 (24.3%)	13/36 (22.4%)	13/36 (22.4%)			
	Ergastic vessel injury	1/38 (2.78%)	0/40 (0%)	4/37 (10.8%)	1/38 (2.6%)	4/58 (6.9%)			
	Bladder injury	1/37 (2.7%)	0/40 (0%)	1/37 (2.7%)	0/38 (0.0%)	1/58 (1.7%)			
	Conversion TAPP	NA	NA	0/37 (0.0%)	0/38 (0.0%)	1/58 (1.7%)			
	Urinary retention	7/36 (19.4%)	3/40 (7.5%)	9/37 (24.3%)	0/38 (0.0%)	12/58 (20.7%)			
	Seroma	NA	NA	0/37 (0.0%)	0/38 (0.0%)	1/58 (1.7%)			
	Hematoma	2/36 (5.56%)	0/40 (0%)	2/37 (5.4%)	1/38 (2.6%)	0/58 (0.0%)			
	Superficial skin infection	0/38 (0%)	1/40 (2.5%)	2/37 (5.4%)	0/38 (0.0%)	2/58 (3.4%)			
Kessler DO, et al. ⁸	Overnight stay	6/36 (16.7%)	3/40 (7.5%)	9/37 (24.3%)	0/38 (0.0%)	12/58 (20.7%)			
	Recurrence of hernia	NA	NA	0/37 (0.0%)	1/38 (2.6%)	0/58 (0.0%)			
	Groin pain 3 months post-repair	NA	NA	1/37 (2.7%)	1/38 (2.6%)	0/58 (0.0%)			
	Obtained CSF	NA	NA	7/15 (47%)	16/17 (94%)	12/38 (31.6%)			
Catalanayud D, et al. ²⁹	CSF = 1000 RBCs				4/15 (27%)	12/17 (71%)			
	Number of attempts				Median 1; IQR 0.75	Median 1; IQR 1			
	OSATS (5-35)				Median 19.3; Range 15.0-31.5	Median 28.5; Range 18.5-32.0			
	Completion of case				4/54 (7%)	6/54 (11%)			
Haycock A, et al. ⁶¹	Maximum fp position: sigmoid				28/54 (52%)	29/54 (54%)			
	Maximum fp position: ascending				12/54 (22%)	9/54 (16%)			
	Maximum fp position: transverse				8/54 (15%)	11/54 (20%)			
	Maximum fp position: descending				2/54 (4%)	0/54 (0%)			
Anberg G, et al. ²	Maximum fp position: cecum				4/54 (7%)	6/54 (11%)			
	Operative time (min)				Median 20; IQR 20-20	Median 20; IQR 19-20			
	Straight insertion depth (cm)				Mean 52; SD 21	Mean 48; SD 23			
	JAG DOPS (0-30)				Median 18; IQR 14-21	Median 16; IQR 14-22			
	Global Rating Scale (7-35)				Median 17; IQR 14-19	Median 16; IQR 14-19			
	Total errors				Mean 86.2; 95% CI 58.2-114.1	Mean 28.4; 95% CI 23.3-33.3			
	Exposure errors				Mean 53.4; 95% CI 16.7-90.1	Mean 15.0; 95% CI 11.1-19.8			
	Clipping and tissue division errors				Mean 7.1; 95% CI 4.0-10.3	Mean 1.9; 95% CI 0.9-2.9			
	Dissection errors				Mean 29.5; 95% CI 14.0-45.0	Mean 11.5; 95% CI 8.8-14.1			
	Operative time (min)				NA	NA			
Cohen J, et al. ¹⁰²	Number of cases needed to reach 95% objective competence				Median 8; 95% CI 8-9	Median 8; 95% CI 8-9			
	Number of cases needed to reach 95% subjective competence				Median 7; 95% CI 6-8	Median 7; 95% CI 6-8			
	Objective competence at session 1				Mean 40.9	Mean 50.4			
	Objective competence at session 2				Mean 52.0	Mean 64.5			
	Objective competence at session 3				Mean 62.0	Mean 74.0			
	Objective competence at session 4				Mean 64.4	Mean 76.7			
	Objective competence at session 5				Mean 70.2	Mean 76.8			
	Objective competence at session 6				Mean 77.6	Mean 77.8			
	Objective competence at session 7				Mean 80.5	Mean 80.8			
	Objective competence at session 8				Mean 83.7	Mean 89.5			
Cohen J, et al. ¹⁰²	Objective competence at session 9				Mean 85.2	Mean 87.8			
	Objective competence at session 10				Mean 90.9	Mean 92.2			
	Subjective competence at session (1-5) 1				Mean 36.6	Mean 47.6			
	Subjective competence at session (1-5) 2				Mean 37.4	Mean 48.6			
	Subjective competence at session (1-5) 3				Mean 68.4	Mean 76.3			
	Subjective competence at session (1-5) 4				Mean 75.4	Mean 78.0			
	Subjective competence at session (1-5) 5				Mean 79.4	Mean 81.3			
	Subjective competence at session (1-5) 6				Mean 82.3	Mean 82.0			
	Subjective competence at session (1-5) 7				Mean 84.1	Mean 86.1			
	Subjective competence at session (1-5) 8				Mean 86.4	Mean 88.8			
Cohen J, et al. ¹⁰²	Subjective competence at session (1-5) 9				Mean 86.8	Mean 88.9			
	Subjective competence at session (1-5) 10				Mean 90.5	Mean 90.8			
	Patient discomfort at session (5-1) 1				Mean 31.4	Mean 25.7			
	Patient discomfort at session (5-1) 2				Mean 19.1	Mean 23.2			
	Patient discomfort at session (5-1) 3				Mean 19.5	Mean 16.7			
	Patient discomfort at session (5-1) 4				Mean 18.2	Mean 16.0			
	Patient discomfort at session (5-1) 5				Mean 16.5	Mean 16.7			
	Patient discomfort at session (5-1) 6				Mean 13.9	Mean 13.4			
	Patient discomfort at session (5-1) 7				Mean 11.3	Mean 11.9			
	Patient discomfort at session (5-1) 8				Mean 10.4	Mean 10.5			
Cohen J, et al. ¹⁰²	Patient discomfort at session (5-1) 9				Mean 11.8	Mean 10.7			
	Patient discomfort at session (5-1) 10				Mean 9.2	Mean 8.9			

*Paper authors do not make clear if values presented were mean (IQR), mean (95% CI) or mean (range). We assumed for the completeness of the table that values were mean (range)