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Operative Characteristics	No-ESI (n=118)	ESI (n=45)	p-value
Procedure, no. (%)			0.91
Decompression only	4 (3%)	2 (5%)	
Non-instrumented fusion	26 (23%)	10 (24%)	
Instrumented fusion	85 (74%)	30 (71%)	
Multi-level fusion, no. (%)	28 (24%)	10 (22%)	1
Laminectomy Level, no. (%)			
L2-L3	12 (11%)	9 (21%)	0.15
L3-L4	58 (51%)	28 (65%)	0.17
L4-L5	113 (97%)	43 (98%)	0.65
L5-S1	37 (32%)	18 (42%)	0.34
Levels decompressed, no. (%)			0.17
0	2 (2%)	1 (2%)	
1	45 (38%)	14 (31%)	
2	44 (37%)	12 (27%)	
3+	27 (23%)	18 (40%)	
Operation time, minutes (SD)	195.4 (81.4)	205.2 (84.1)	0.51
Blood loss, cc (SD)	577.5 (466.6)	493.8 (366.9)	0.28
Blood Replacement, no. (%)			
Intraoperative replacement	33 (28%)	19 (42%)	0.13
Post-operative transfusion	18 (16%)	7 (16%)	0.85
Length of hospital stay, days (SD)	4.7 (3.2)	3.8 (1.6)	0.056
Intraoperative complications§			
Dural tear/ spinal fluid leak	10 (8%)	6 (13%)	0.52
Vascular injury	0	0	
Other	3 (3%)	0 (0%)	0.67
None	105 (89%)	39 (87%)	0.89

Postoperative complications/events¶			
Nerve root injury	0	0	
Wound hematoma	1 (1%)	0 (0%)	0.61
Wound Infection	1 (1%)	2 (5%)	0.38
Other	8 (7%)	4 (9%)	0.89
None	91 (78%)	32 (73%)	0.58
Additional surgeries (1-year rate)	8 (7%)	8 (17%)	*0.03
Additional surgeries (2-year rate)	13 (11%)	11 (24%)	*0.03
Additional surgeries (3-year rate)	15 (13%)	11 (24%)	0.06
Additional surgeries (4-year rate)	18 (15%)	12 (26%)	0.07
Recurrent stenosis/progressive spondylolisthesis	3 (3%)	6 (14%)	
Pseudoarthrosis/fusion exploration	1	0	
Complication or Other	7 (6%)	4 (9.3%)	
New condition	6 (5.2%)	1	

Appendix A. Comparison of surgical characteristics between operative patients who received epidural steroid injection within three months of SPORT enrollment (ESI), and operative patients who did not receive injections (No-ESI). Bolded and asterisked values indicate statistical significance to $p < 0.05$.

Patient-reported Outcome	ESI	1-Year			2-Year			3-Year			4-Year		
		Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)
SF-36 Bodily Pain (BP) (0-100) (SE)	No-ESI ESI	34.6 (2.3) 30.4 (4.2)	19.2 (2.5) 5 (3.8)	15.4 (9.3 ,21.5) 25.4 (15.8 ,35.1)	34.2 (2.2) 30.5 (3.9)	16 (2.6) 8.9 (4.2)	18.3 (12 ,24.5) 21.6 (11.6 ,31.6)	35.7 (2.3) 31.8 (3.9)	21.5 (2.8) 5.8 (4.8)	14.2 (7.6 ,20.8) 26 (15.1 ,36.9)	33.7 (2.4) 28.9 (4.1)	17 (3) 11.1 (5.2)	16.7 (9.6 ,23.8) 17.8 (5.9 ,29.6)
	p-value	0.39	0.002	0.083	0.42	0.16	0.57	0.39	0.005	0.065	0.31	0.33	0.88
SF-36 Physical Function (PF) (0-100) (SE)	No-ESI	28.7 (2.1)	15.2 (2.3)	13.4 (7.8 ,19.1)	27.4 (2.1)	15.9 (2.4)	11.5 (5.7 ,17.4)	25.5 (2.1)	11.2 (2.6)	14.3 (8.1 ,20.4)	27.2 (2.2)	10.2 (2.8)	17.1 (10.4 ,23.7)
	ESI	27.2 (3.9)	6.1 (3.5)	21.2 (12.1 ,30.2)	24.7 (3.6)	1.6 (3.9)	23.2 (13.8 ,32.5)	29.3 (3.6)	6.7 (4.6)	22.6 (12.3 ,33)	23.4 (3.8)	1.4 (4.9)	22 (10.7 ,33.3)
p-value	0.75	0.03	0.15	0.52	0.002	0.035	0.35	0.40	0.17	0.39	0.13	0.45	
Mental Component Summary (MCS) (0-100) (SE)	No-ESI	3.2 (0.9)	1.3 (1)	1.8 (-0.7 ,4.3)	2.7 (0.9)	1.3 (1.1)	1.4 (-1.2 ,4)	2.7 (0.9)	-0.1 (1.1)	2.7 (0 ,5.4)	1.6 (1)	-0.2 (1.2)	1.8 (-1.2 ,4.8)
	ESI	0.2 (1.7)	0.8 (1.5)	-0.6 (-4.6 ,3.5)	1.7 (1.5)	0.3 (1.7)	1.4 (-2.8 ,5.6)	1.9 (1.5)	-1.5 (2)	3.4 (-1.3 ,8.1)	2.2 (1.7)	0.1 (2.3)	2.1 (-3.2 ,7.5)
p-value	0.13	0.74	0.32	0.60	0.62	0.98	0.66	0.51	0.80	0.74	0.89	0.93	
Physical Component Summary (PCS) (0-100) (SE)	No-ESI	12.5 (0.9)	6.3 (1)	6.1 (3.7 ,8.5)	12 (0.9)	5.5 (1)	6.5 (4 ,9)	11.1 (0.9)	5.1 (1.1)	6 (3.3 ,8.6)	11.9 (1)	4.6 (1.2)	7.3 (4.4 ,10.1)
	ESI	11.8 (1.7)	2 (1.5)	9.8 (6 ,13.6)	11.5 (1.5)	1 (1.7)	10.5 (6.5 ,14.4)	12.6 (1.5)	1.9 (1.9)	10.7 (6.2 ,15.1)	10.5 (1.7)	2.1 (2.2)	8.4 (3.3 ,13.5)
p-value	0.74	0.017	0.11	0.78	0.024	0.089	0.39	0.16	0.069	0.46	0.32	0.71	
Oswestry Disability Index (ODI) (0-100) (SE)	No-ESI	-24.7 (1.7)	-9.2 (1.8)	-15.5 (-19.7 , -11.3)	-24.8 (1.6)	-9.2 (1.9)	-15.6 (-20 , -11.2)	-20.6 (1.7)	-9.5 (2)	-11.1 (-15.8 , -6.5)	-22.3 (1.7)	-8.1 (2.2)	-14.2 (-19.2 , -9.2)
	ESI	-20.5 (3)	-3.4 (2.8)	-17.1 (-23.8 , -10.3)	-21.9 (2.8)	-5.8 (3.1)	-16.1 (-23.1 , -9.1)	-23.3 (2.8)	-8 (3.4)	-15.4 (-22.9 , -7.8)	-21.6 (3)	-6.8 (3.7)	-14.9 (-23.1 , -6.6)
p-value	0.24	0.085	0.70	0.38	0.36	0.90	0.41	0.70	0.34	0.84	0.75	0.89	
Sciatica Bothersomeness Index (0-24) (SE)	No-ESI	-9.8 (0.6)	-5 (0.6)	-4.8 (-6.5 , -3.2)	-8.8 (0.6)	-4.5 (0.7)	-4.3 (-6 , -2.6)	-8.6 (0.6)	-5.1 (0.8)	-3.5 (-5.3 , -1.7)	-8.7 (0.6)	-3.8 (0.8)	-4.9 (-6.8 , -3)
	ESI	-8.7 (1.1)	-1.8 (1)	-6.8 (-9.4 , -4.3)	-8.7 (1)	-2.6 (1.1)	-6.2 (-8.8 , -3.5)	-10.3 (1)	-2.9 (1.2)	-7.4 (-10.3 , -4.5)	-8.8 (1.1)	-2.8 (1.3)	-5.9 (-9 , -2.8)
p-value	0.38	0.008	0.19	0.97	0.14	0.23	0.16	0.12	0.023	0.96	0.54	0.58	
Low Back Pain Bothersomeness (0-6) (SE)	No-ESI	-2.4 (0.2)	-1.2 (0.2)	-1.2 (-1.7 , -0.7)	-2.1 (0.2)	-1.2 (0.2)	-0.9 (-1.4 , -0.4)	-2.1 (0.2)	-1.3 (0.2)	-0.9 (-1.4 , -0.4)	-2.2 (0.2)	-1.2 (0.2)	-0.9 (-1.5 , -0.3)
	ESI	-2.3 (0.3)	-0.6 (0.3)	-1.7 (-2.5 , -0.9)	-1.9 (0.3)	-1.4 (0.3)	-0.5 (-1.3 , 0.3)	-1.8 (0.3)	-1.1 (0.4)	-0.7 (-1.6 , 0.2)	-1.7 (0.3)	-0.6 (0.4)	-1.1 (-2 , -0.2)
p-value	0.78	0.046	0.26	0.68	0.47	0.42	0.37	0.63	0.80	0.26	0.096	0.74	
Very/somewhat satisfied with symptoms (%)	No-ESI	78.7	37.3	41.3 (27.6 ,55.1)	76.2	36.9	39.3 (25 ,53.6)	73.4	47.9	25.5 (9.6 ,41.5)	63.9	33.8	30.1 (13.2 ,47)
	ESI	79.1	26.4	52.7 (32.7 ,72.7)	72.1	24.8	47.2 (25.7 ,68.8)	70.4	21.1	49.3 (26.1 ,72.5)	69.5	50.5	19 (-11 ,49)
p-value	0.97	0.33	0.45	0.65	0.33	0.62	0.75	0.089	0.21	0.62	0.27	0.58	

Appendix B. Comparison of patients who received epidural steroid injection within three months of SPORT enrollment (ESI) to those who did not receive injections (No-ESI) with respect to changes in patient-reported outcome measures at each annual follow-up timepoint. Comparison was conducted within the surgical and Non-operative patient cohorts.

Patient Reported Outcome	ESI	1-Year			2-Year			3-Year			4-Year		
		Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)	Surgical	Non-operative	Treatment Effect (95% CI)
SF-36 Bodily Pain (BP) (0-100) (SE)	No-ESI	69.5 (2.3)	54.1 (2.5)	15.4 (9.3 ,21.5)	69.1 (2.2)	50.8 (2.6)	18.3 (12 ,24.5)	70.5 (2.3)	56.3 (2.8)	14.2 (7.6 ,20.8)	68.6 (2.4)	51.9 (3)	16.7 (9.6 ,23.8)
	ESI	65.3 (4.2)	39.8 (3.8)	25.4 (15.8 ,35.1)	65.4 (3.9)	43.8 (4.2)	21.6 (11.6 ,31.6)	66.7 (3.9)	40.6 (4.8)	26 (15.1 ,36.9)	63.7 (4.1)	46 (5.2)	17.8 (5.9 ,29.6)
	pvalue	0.39	0.002	0.084	0.42	0.16	0.57	0.39	0.005	0.065	0.31	0.33	0.88
SF-36 Physical Function (PF) (0-100) (SE)	No-ESI	65 (2.1)	51.6 (2.3)	13.4 (7.8 ,19.1)	63.7 (2.1)	52.2 (2.4)	11.5 (5.7 ,17.4)	61.8 (2.1)	47.6 (2.6)	14.3 (8.1 ,20.4)	63.6 (2.2)	46.5 (2.8)	17.1 (10.4 ,23.7)
	ESI	63.6 (3.9)	42.4 (3.5)	21.2 (12.1 ,30.2)	61.1 (3.6)	37.9 (3.9)	23.2 (13.8 ,32.5)	65.7 (3.6)	43.1 (4.6)	22.6 (12.3 ,33)	59.8 (3.8)	37.7 (4.9)	22 (10.7 ,33.3)
	pvalue	0.75	0.03	0.15	0.52	0.002	0.035	0.35	0.40	0.17	0.39	0.13	0.45
Mental Component Summary (MCS) (0-100) (SE)	No-ESI	54.3 (0.9)	52.5 (1)	1.8 (-0.7 ,4.3)	53.8 (0.9)	52.4 (1.1)	1.4 (-1.2 ,4)	53.8 (0.9)	51.1 (1.1)	2.7 (0 ,5.4)	52.7 (1)	50.9 (1.2)	1.8 (-1.2 ,4.8)
	ESI	51.3 (1.7)	51.9 (1.5)	-0.6 (-4.6 ,3.5)	52.8 (1.5)	51.4 (1.7)	1.4 (-2.8 ,5.6)	53 (1.5)	49.6 (2)	3.4 (-1.3 ,8.1)	53.4 (1.7)	51.3 (2.3)	2.1 (-3.2 ,7.5)
	pvalue	0.13	0.74	0.32	0.60	0.62	0.98	0.66	0.51	0.80	0.74	0.89	0.93
Physical Component Summary (PCS) (0-100) (SE)	No-ESI	43.3 (0.9)	37.2 (1)	6.1 (3.7 ,8.5)	42.8 (0.9)	36.3 (1)	6.5 (4 ,9)	41.9 (0.9)	36 (1.1)	6 (3.3 ,8.6)	42.8 (1)	35.5 (1.2)	7.3 (4.4 ,10.1)
	ESI	42.7 (1.7)	32.9 (1.5)	9.8 (6 ,13.6)	42.3 (1.5)	31.9 (1.7)	10.5 (6.5 ,14.4)	43.5 (1.5)	32.8 (1.9)	10.7 (6.2 ,15.1)	41.3 (1.7)	33 (2.2)	8.4 (3.3 ,13.5)
	pvalue	0.74	0.017	0.11	0.78	0.024	0.089	0.39	0.16	0.069	0.46	0.32	0.71
Oswestry Disability Index (ODI) (0-100) (SE)	No-ESI	14.6 (1.7)	30.1 (1.8)	-15.5 (-19.7 , -11.3)	14.5 (1.6)	30.1 (1.9)	-15.6 (-20 , -11.2)	18.7 (1.7)	29.8 (2)	-11.1 (-15.8 , -6.5)	16.9 (1.7)	31.1 (2.2)	-14.2 (-19.2 , -9.2)
	ESI	18.8 (3)	35.8 (2.8)	-17.1 (-23.8 , -10.3)	17.4 (2.8)	33.5 (3.1)	-16.1 (-23.1 , -9.1)	16 (2.8)	31.3 (3.4)	-15.4 (-22.9 , -7.8)	17.6 (3)	32.5 (3.7)	-14.9 (-23.1 , -6.6)
	pvalue	0.24	0.085	0.70	0.38	0.36	0.90	0.41	0.70	0.34	0.84	0.75	0.89
Stenosis Bothersomeness Index (0-24) (SE)	No-ESI	4.5 (0.6)	9.3 (0.6)	-4.8 (-6.5 , -3.2)	5.5 (0.6)	9.8 (0.7)	-4.3 (-6 , -2.6)	5.7 (0.6)	9.2 (0.8)	-3.5 (-5.3 , -1.7)	5.6 (0.6)	10.5 (0.8)	-4.9 (-6.8 , -3)
	ESI	5.7 (1.1)	12.5 (1)	-6.8 (-9.4 , -4.3)	5.6 (1)	11.8 (1.1)	-6.2 (-8.8 , -3.5)	4 (1)	11.4 (1.2)	-7.4 (-10.3 , -4.5)	5.6 (1.1)	11.5 (1.3)	-5.9 (-9 , -2.8)
	pvalue	0.38	0.007	0.19	0.97	0.14	0.23	0.16	0.12	0.023	0.96	0.54	0.58
Low Back Pain Bothersomeness (0-6) (SE)	No-ESI	1.6 (0.2)	2.8 (0.2)	-1.2 (-1.7 , -0.7)	1.9 (0.2)	2.8 (0.2)	-0.9 (-1.4 , -0.4)	1.9 (0.2)	2.7 (0.2)	-0.9 (-1.4 , -0.4)	1.8 (0.2)	2.7 (0.2)	-0.9 (-1.5 , -0.3)
	ESI	1.7 (0.3)	3.4 (0.3)	-1.7 (-2.5 , -0.9)	2.1 (0.3)	2.6 (0.3)	-0.5 (-1.3 , 0.3)	2.1 (0.3)	2.9 (0.4)	-0.7 (-1.6 , 0.2)	2.3 (0.3)	3.4 (0.4)	-1.1 (-2 , -0.2)
	pvalue	0.78	0.046	0.26	0.68	0.47	0.42	0.37	0.63	0.80	0.26	0.096	0.74

Very/somewhat satisfied with symptoms (%)	No-ESI	78.7	37.3	41.3 (27.6 ,55.1)	76.2	36.9	39.3 (25 ,53.6)	73.4	47.9	25.5 (9.6 ,41.5)	63.9	33.8	30.1 (13.2 ,47)
	ESI	79.1	26.4	52.7 (32.7 ,72.7)	72.1	24.8	47.2 (25.7 ,68.8)	70.4	21.1	49.3 (26.1 ,72.5)	69.5	50.5	19 (-11 ,49)
	pvalue	0.97	0.33	0.45	0.65	0.33	0.62	0.75	0.089	0.21	0.62	0.27	0.58

Appendix C. Comparison of patients who received epidural steroid injection within three months of SPORT enrollment (ESI) to those who did not receive injections (No-ESI) with respect to patient-reported outcome measures at each annual follow-up timepoint.