

Supplementary table A: All primary and secondary outcomes measured in the PTED-study.

Outcome	12 month data	24 month data	60 month data	Reporting
Primary outcome				
VAS leg pain	X	X	X	Current report on 12 month data
Secondary outcome				
VAS back pain	X	X	X	Current report on 12 month data
Oswestry disability index	X	X	X	Current report on 12 month data
Quality of life VAS	X	X	X	Current report on 12 month data
Patient self-perceived recovery and satisfaction	X	X	X	Current report on 12 month data
Short Form 36	X	X	X	Current report on 12 month data
Complications and reoperations	X	X	X	Current report on 12 month data
Physical examination	X	X	X	Current report and reported in depth separately
Scar size	X			Current report and reported in depth separately
Body image and cosmesis	X			
Costs	X	X		Reported separately in economic evaluation
Utilities (EQ-5D-5L)	X	X		
Learning curve data	X			Current report and reported in depth separately
Likert-scales on proficiency in PTED of surgeons	X			
Objective structured assessment of technical skills	X			

Supplementary table B: Characteristics of the patients belonging to the learning curve.

Characteristic	PTED (N=125)
Age — yr	45.8 (11.6)
Male sex—no. (%)	71 (56.8%)
Current smoker —no. (%)	34 (27.2%)
Body-mass index—kg/m ²	26.9 (5.0)
Paid employment- no. (%)	102 (81.6%)
Duration of leg pain—months	4.0 (4.0)
Radiating pain in the right leg—no. (%)	64 (51.2%)
Sensory disturbances—no. (%)	116 (92.8%)
Muscle weakness —no. (%)	78 (62.4%)
Level of disk herniation causing sciatica —no. (%)	
L2-L3	0
L3-L4	11 (8.8%)
L4-L5	61 (48.8%)
L5-L6	1 (0.8%)
L5-S1	52 (41.6%)
L6-S1	0
Score on the visual-analogue scale of pain	
Leg pain	76.0 (25.0)
Back pain	62.0 (38.0)
Oswestry disability index	46.0 (22.0)
Score on the visual-analogue scale of quality of life	50.6 (23.2)
SF-36 score	
Physical Component Summary	29.9 (9.7)
Mental Component Summary	48.6 (19.6)
Preference for PTED —no. (%)	85 (68.0%)
Performing surgeon	
Learning curve surgeon 1 ¹	50 (40.0%)
Learning curve surgeon 2 ²	43 (34.4%)
Learning curve surgeon 3 ³	32 (25.6%)

1 Learning curve surgeon 1: Thirteen cases were performed under direct supervision, with the remaining 37 cases being performed by the learning curve surgeon alone.

2 Learning curve surgeon 2: Fifteen cases were performed under direct supervision, with the remaining 28 cases being performed by the learning curve surgeon alone.

3 Learning curve surgeon 3: Thirteen cases were performed under direct supervision, with the remaining 19 cases being performed by the learning curve surgeon alone.

Supplementary table C: Primary and secondary outcomes of the patients belonging to the learning curve divided in the early and late learning curve cases. The first 25 patients per surgeon that underwent PTED by the surgeons were categorized as the early cases and the following cases (up to case 50 per surgeon) were categorized as the late cases. Median scores on the VAS, Oswestry disability scale and both Physical and Mental Component Summaries of the SF-36, together with their interquartile range, are shown.

Variable	Outcome			
	PTED			Open microdiscectomy
	<i>Early cases (N=75)</i>	<i>Late cases (N=50)</i>	<i>Total (N=125)</i>	<i>Total (N=309)</i>
VAS leg pain				
6 weeks	13.0 (27.0)	20.0 (50.0)	16.0 (34.0)	21.0 (43.0)
12 months	7.0 (44.0)	18.0 (47.0)	11.0 (48.0)	16.0 (51.0)
Oswestry Disability Index				
6 weeks	15.8 (26.0)	24.0 (22.2)	20.0 (24.0)	24.0 (23.7)
12 months	11.1 (23.5)	14.0 (20.0)	11.1 (22.0)	12.7 (24.0)
VAS score for back pain				
6 weeks	16.5 (34.0)	22.0 (38.0)	19.0 (38.0)	22.0 (41.0)
12 months	23.0 (48.0)	17.0 (49.0)	20.0 (46.0)	21.0 (51.0)
VAS score for quality of life				
6 weeks	70.5 (34.0)	66.0 (26.0)	67.0 (30.0)	64.0 (27.0)
12 months	78.0 (32.0)	71.0 (30.0)	74.0 (31.0)	70.5 (28.0)
SF-36 Physical Component Summary				
6 weeks	41.9 (12.9)	42.3 (14.9)	42.1 (13.8)	41.0 (12.9)
12 months	49.9 (17.0)	47.5 (17.8)	48.4 (16.5)	46.4 (15.2)
SF-36 Mental Component Summary				
6 weeks	52.9 (15.6)	51.3 (15.8)	52.5 (15.6)	50.1 (16.0)
12 months	54.1 (9.5)	54.2 (7.4)	54.1 (8.7)	53.8 (10.6)
Duration of surgery—minutes	58.8 (20.6)	53.9 (16.0)	56.9 (19.1)	
Estimated blood loss <10mL	62.7%	61.7%	62.3%	68 (27.3%)
Total intraoperative complications				
Dural tear	0	0	0	8 (3.2%)
Nerve root injury	0	0	0	1 (0.4%)
Exploration on wrong level	1	0	1 (0.8%)	0
Other	1	0	1	0
Underwent open microdiscectomy*	2	2	4 (3.3%)	-
Total postoperative complications				
Wound hematoma	0	0	0	1 (0.4%)
Wound infection	0	0	0	3 (1.2%)
Cerebrospinal fluid leakage	0	0	0	2 (0.8%)
Discharged on day of surgery	96%	87.2%	92.6%	5.6%
Repeated surgery within 1 year	9 (12%)	6 (12.8%)	15 (12.3%)	14 (5.6%)
Recurrent disk herniation	9 (12%)	5 (10.6%)	14 (11.5%)	14 (5.6%)
Stenosis	0	1 (2.1%)	1 (0.8%)	0

*Four cases of conversion.

Supplementary table D: Primary and secondary outcomes on all time points according to the intention-to-treat analysis using mixed model-analysis. Median values with interquartile ranges are shown for the visual analogue scales for leg pain, back pain and quality of life, the Oswestry Disability Index and the Physical and Mental Component Summaries of the SF-36 at the various time points divided per surgical technique. Between-group differences are shown which are adjusted for hospital and baseline scores. Odds ratios of the Likert-scales are also adjusted for hospital.

Variable	1 day			2 weeks			4 weeks			6 weeks		
	PTED (N=168)	Open microdiscectomy (N=242)	Between-group difference (95%CI); Adjusted and fully adjusted	PTED (N=169)	Open microdiscectomy (N=240)	Between-group difference (95%CI); Adjusted and fully adjusted	PTED (N=169)	Open microdiscectomy (N=241)	Between-group difference (95%CI); Adjusted and fully adjusted	PTED (N=170)	Open microdiscectomy (N=249)	Between-group difference (95%CI); Adjusted and fully adjusted
Primary outcome												
VAS for leg pain	11.0 (36.0)	13.0 (32.0)	-1.2 (-5.3 to 2.9) -1.9 (-6.1 to 2.5)	24.5 (44.0)	25.0 (45.0)	-1.2 (-5.8 to 2.9) -1.8 (-6.2 to 2.1)	22.0 (48.0)	25.0 (47.0)	1.2 (-2.5 to 5.0) 0.8 (-3.2 to 4.6)	18.0 (43.0)	21.0 (43.0)	0.2 (-3.1 to 3.6) -0.1 (-3.7 to 3.6)
Secondary outcome												
Oswestry Disability Index	48.0 (33.3)	60.0 (23.6)	10.6 (7.6 to 13.9) 11.1 (8.1 to 14.1)	32.0 (30.0)	41.0 (29.2)	6.5 (4.0 to 8.9) 6.7 (4.1 to 9.1)	26.0 (24.7)	30.0 (26.5)	4.9 (2.9 to 7.1) 5.2 (3.2 to 7.2)	20.0 (26.0)	24.0 (23.7)	3.4 (1.6 to 5.4) 3.8 (1.9 to 5.7)
VAS for back pain	46.0 (48.0)	47.0 (44.0)	4.4 (0 to 8.9) 4.7 (0.4 to 9.2)	28.0 (37.0)	29.5 (37.0)	1.8 (-1.9 to 5.4) 1.7 (-3.0 to 6.4)	23.0 (37.0)	24.5 (39.0)	1.4 (-1.7 to 5.0) 1.5 (-1.7 to 4.6)	21.0 (36.0)	22.0 (41.0)	0.9 (-2.2 to 4.1) 0.9 (-2.4 to 4.2)
VAS for quality of life	61.0 (27.0)	51.0 (27.0)	-7.5 (-10.9 to -4.0) -7.2 (-10.5 to -3.6)	61 (27.0)	56.5 (35.0)	-6.8 (-9.8 to -3.9) -6.7 (-9.6 to -3.7)	64.0 (28.0)	58.0 (30.0)	-8.0 (-10.5 to -5.3) -7.8 (-10.5 to -4.9)	70.0 (24.0)	64.0 (27.0)	-7.8 (-10.3 to -5.4) -7.6 (-10.2 to -5.2)
SF-36 Physical Component Summary	-	-	- -	37.8 (11.2)	36.9 (9.4)	-1.3 (-2.7 to -0.1) -0.8 (-2.0 to 0.3)	40.9 (13.4)	37.9 (11.8)	-1.6 (-2.9 to -0.3) -1.4 (-2.3 to -0.3)	43.4 (13.2)	41.1 (13.0)	-1.9 (-3.0 to -0.7) -2.0 (-2.9 to -1.0)
SF-36 Mental Component Summary	-	-	- -	45.8 (18.4)	42.7 (19.7)	-1.3 (-3.1 to 0.5) -1.2 (-2.6 to 0.5)	54.7 (15.5)	48.3 (16.7)	-1.6 (-3.1 to -0.2) -1.0 (-2.2 to 0.3)	53.7 (15.4)	50.1 (15.9)	-2.3 (-3.5 to -1.0) -1.7 (-2.8 to -0.6)
Proportion recovered from symptoms	81 (48.2%)	111 (45.9%)	OR 1.2 (0.7 to 2.1) OR 1.2 (0.6 to 2.1)	89 (52.7%)	118 (49.2%)	OR 1.2 (0.7 to 2.2) OR 1.2 (0.7 to 2.2)	97 (57.4%)	135 (56.0%)	OR 1.0 (0.6 to 1.8) OR 1.0 (0.6 to 1.9)	113(66.5%)	148 (59.4%)	OR 1.5 (0.8 to 2.6) OR 1.4 (0.8 to 2.6)
Proportion recovered from leg pain	108 (64.3%)	152 (62.8%)	OR 1.1 (0.6 to 2.0) OR 1.0 (0.5 to 1.8)	98 (58.0%)	144 (60.0%)	OR 0.8 (0.5 to 1.5) OR 0.8 (0.4 to 1.4)	103 (60.9%)	156 (64.7%)	OR 0.7 (0.4 to 1.3) OR 0.7 (0.4 to 1.2)	119(70.0%)	168 (67.5%)	OR 1.1 (0.6 to 2.0) OR 1.1 (0.6 to 1.9)
Proportion satisfied with change in symptoms	-	-	-	97 (57.4%)	124 (51.7%)	OR 1.3 (0.7 to 2.4) OR 1.4 (0.8 to 2.6)	104 (61.5%)	139 (57.7%)	OR 1.2 (0.7 to 2.1) OR 1.2 (0.7 to 2.2)	112(65.9%)	149 (59.8%)	OR 1.3 (0.7 to 2.4) OR 1.4 (0.8 to 2.6)
Proportion satisfied with result of treatment	-	-	-	106 (62.7%)	140 (58.3%)	OR 1.2 (0.7 to 2.2) OR 1.2 (0.7 to 2.3)	112 (66.3%)	142 (58.9%)	OR 1.4 (0.8 to 2.6) OR 1.5 (0.8 to 2.9)	121(71.2%)	155 (62.2%)	OR 1.7 (0.9 to 3.1) OR 1.8 (1.0 to 3.4)

	3 months			6 months			9 months			12 months		
	PTED (N=169)	Open microdiscectomy (N=249)	Between-group difference (95% CI); Adjusted and fully adjusted	PTED (N=163)	Open microdiscectomy (N=235)	Between-group difference (95% CI); Adjusted and fully adjusted	PTED (N=158)	Open microdiscectomy (N=232)	Between-group difference (95% CI); Adjusted and fully adjusted	PTED (N=168)	Open microdiscectomy (N=245)	Between-group difference (95% CI); Adjusted and fully adjusted
Primary outcome												
VAS for leg pain	13.0 (34.0)	17.0 (40.0)	1.3 (-2.2 to 5.0) 0.6 (-3.2 to 4.2)	11.5 (26.0)	14.5 (45.0)	4.9 (1.2 to 8.5) 5.0 (1.3 to 8.9)	10.0 (25.0)	15.0 (50.0)	6.4 (2.5 to 10.8) 6.3 (2.3 to 10.5)	7.0 (31.0)	16.0 (51.0)	7.1 (2.8 to 11.3) 7.1 (2.3 to 11.3)
Secondary outcome												
Oswestry Disability Index	13.3 (22.3)	15.6 (21.7)	2.3 (0.2 to 4.3) 2.5 (0.4 to 4.5)	11.1 (18.0)	14.0 (23.7)	3.1 (0.9 to 5.2) 3.4 (1.3 to 5.6)	8.0 (17.8)	12.7 (26.0)	5.4 (3.3 to 7.7) 5.8 (3.6 to 8.0)	10.0 (16.0)	12.7 (24.0)	5.3 (3.0 to 7.7) 5.7 (3.3 to 8.0)
VAS for back pain	17.0 (38.0)	23.5 (44.0)	2.7 (-0.4 to 6.4) 2.6 (-0.7 to 6.3)	15.5 (37.0)	24.5 (47.0)	6.2 (2.8 to 10.0) 6.7 (2.6 to 10.7)	15.0 (29.0)	26.0 (50.0)	10.3 (7.0 to 14.1) 10.7 (6.9 to 14.5)	16.0 (35.0)	21.0 (51.0)	6.0 (2.0 to 10.0) 6.4 (2.3 to 10.5)
VAS for quality of life	71.0 (25.0)	68.0 (26.0)	-5.1 (-7.6 to -2.7) -4.9 (-7.6 to -2.4)	73.0 (23.0)	68.0 (26.0)	-4.3 (-7.2 to -1.3) -4.5 (-7.5 to -1.6)	74.0 (21.0)	70.5 (26.0)	-6.0 (-8.7 to -3.4) -6.2 (-8.8 to -3.6)	76.5 (25.0)	70.5 (28.0)	-6.2 (-9.2 to -3.2) -6.3 (-9.1 to -3.2)
SF-36 Physical Component Summary	46.9 (14.7)	45.0 (12.5)	-1.5 (-2.6 to -0.4) -1.5 (-2.6 to -0.5)	48.5 (13.0)	46.1 (14.7)	-1.8 (-3.0 to -0.6) -2.2 (-3.3 to -1.1)	50.5 (14.5)	47.3 (14.5)	-2.8 (-4.1 to -1.5) -2.2 (-3.4 to -1.1)	50.8 (14.2)	46.4 (15.3)	-2.8 (-4.1 to -1.6) -2.1 (-3.2 to -0.9)
SF-36 Mental Component Summary	54.3 (10.6)	51.4 (14.4)	-2.3 (-3.6 to -1.1) -1.9 (-3.0 to -0.7)	54.2 (9.0)	53.8 (12.2)	-2.1 (-3.4 to -0.7) -1.6 (-2.7 to -0.3)	54.9 (9.1)	52.8 (14.2)	-3.0 (-4.3 to -1.7) -2.1 (-3.2 to -0.7)	54.6 (7.1)	53.8 (10.5)	-2.1 (-3.4 to -0.9) -1.5 (-2.6 to -0.3)
Proportion recovered from symptoms	124 (73.4%)	164 (65.9%)	OR 1.5 (0.8 to 2.8) OR 1.4 (0.8 to 2.6)	120 (73.6%)	154 (65.5%)	OR 1.6 (0.9 to 3.0) OR 1.5 (0.8 to 2.8)	125 (79.1%)	151 (65.1%)	OR 2.5 (1.3 to 4.8) OR 2.6 (1.3 to 5.0)	133 (79.2%)	157 (64.1%)	OR 2.7 (1.4 to 5.2) OR 2.7 (1.4 to 5.3)
Proportion recovered from leg pain	129 (76.3%)	172 (69.1%)	OR 1.6 (0.9 to 2.9) OR 1.5 (0.8 to 2.7)	125 (76.7%)	165 (70.2%)	OR 1.5 (0.8 to 2.9) OR 1.6 (0.8 to 3.0)	131 (82.9%)	164 (70.7%)	OR 2.5 (1.3 to 4.8) OR 2.5 (1.3 to 4.8)	133 (79.2%)	169 (69.0%)	OR 2.0 (1.0 to 3.7) OR 1.9 (1.0 to 3.6)
Proportion satisfied with change in symptoms	125 (74.0%)	156 (62.7%)	OR 2.0 (1.1 to 3.6) OR 2.0 (1.1 to 3.8)	119 (73.0%)	143 (60.9%)	OR 2.1 (1.1 to 4.0) OR 2.3 (1.2 to 4.4)	121 (76.6%)	147 (63.4%)	OR 2.3 (1.2 to 4.5) OR 2.5 (1.3 to 4.8)	127 (75.6%)	150 (61.5%)	OR 2.6 (1.4 to 4.8) OR 2.8 (1.4 to 5.2)
Proportion satisfied with result of treatment	129 (76.3%)	172 (69.1%)	OR 1.5 (0.8 to 2.9) OR 1.6 (0.8 to 3.1)	124 (76.1%)	155 (66.0%)	OR 2.0 (1.0 to 3.8) OR 2.2 (1.1 to 4.2)	124 (78.5%)	159 (68.5%)	OR 1.9 (1.0 to 3.8) OR 2.1 (1.1 to 4.3)	133 (79.2%)	161 (66.0%)	OR 2.6 (1.3 to 5.0) OR 2.8 (1.4 to 5.4)

Supplementary table E: Results of the linear and logistic regression analyses of the primary and secondary outcomes at 12 months, according to the intention-to-treat analysis. Median values with interquartile ranges are shown for the visual analogue scales for leg pain, back pain and quality of life, the Oswestry Disability Index and the Physical and Mental Component Summaries of the SF-36 divided per surgical technique. Between-group differences are shown which are adjusted for hospital and baseline scores. Odds ratios of the Likert-scales are also adjusted for hospital.

	12 months		
	PTED (N=168)	Open microdiscectomy (N=245)	Between-group difference (95%CI)
Primary outcome			
VAS for leg pain	8.0 (31.0)	16.0 (51.0)	7.9 (1.8 to 13.4)
Secondary outcome			
Oswestry Disability Index	10.0 (16.0)	12.7 (24.0)	5.6 (2.6 to 9.0)
VAS for back pain	16.0 (35.0)	21.0 (51.0)	7.0 (1.6 to 12.4)
VAS for quality of life	75.5 (25.0)	70.5 (28.0)	-6.3 (-10.4 to -2.0)
SF-36 Physical Component Summary	50.8 (14.2)	46.4 (15.3)	-3.0 (-5.0 to -1.1)
SF-36 Mental Component Summary	54.6 (7.1)	53.8 (10.5)	-1.8 (-3.6 to -0.2)
Proportion recovered from symptoms	133 (79.2%)	157 (64.1%)	OR 2.1 (1.3 to 3.4)
Proportion recovered from leg pain	133 (79.2%)	169 (69.0%)	OR 1.7 (1.0 to 2.7)
Proportion satisfied with change in symptoms	127 (75.6%)	150 (61.5%)	OR 2.1 (1.3 to 3.3)
Proportion satisfied with result of treatment	133 (79.2%)	161 (66.0%)	OR 2.1 (1.3 to 3.4)

Supplementary table F: Demographics and surgical outcomes according to per protocol analysis

Characteristic	PTED (N=168)	Open microdiscectomy (N=244)
Age — yr	44.7 (12.5)	45.8 (11.1)
Male sex—no. (%)	94 (56.0%)	139 (57.0%)
Current smoker —no. (%)	41 (24.4%)	79 (32.4%)
Body-mass index—kg/m ²	26.6 (4.1)	26.7 (4.9)
Paid employment- no. (%)	143 (85.1%)	192 (78.7%)
Duration of leg pain—months	4.0 (4.0)	4.0 (4.0)
Level of disk herniation causing sciatica —no. (%)		
L2-L3	1 (0.6%)	6 (2.5%)
L3-L4	14 (8.3%)	10 (4.1%)
L4-L5	64 (38.1%)	110 (45.1%)
L5-L6	1 (0.6%)	1 (0.4%)
L5-S1	88 (52.4%)	116 (47.5%)
L6-S1	0	1 (0.4%)
Score on the visual-analogue scale of pain		
Leg pain	71.0 (22.0)	74.5 (21.0)
Back pain	53.0 (45.0)	51.0 (51.0)
Oswestry disability index	46.0 (25.7)	44.2 (24.0)
Score on the visual-analogue scale of quality of life	48.0 (32.0)	51.0 (33.0)
SF-36 Physical Component Summary	30.4 (11.3)	29.3 (11.9)
SF-36 Mental Component Summary	49.6 (16.8)	48.6 (18.9)
Preference for PTED —no. (%)	144 (85.7%)	180 (73.8%)
Duration of surgery—minutes	33.7 (13.9)	33.3 (13.5)
Estimated blood loss <10mL	124 (73.8%)	63 (25.8%)
Dural tear	0	8 (3.3%)
Nerve root injury	0	1 (0.4%)
Deep venous thrombosis	0	1 (0.4%)
Exploration on wrong level	1 (0.6%)	0
Length of stay in hospital	0 (0.2)	1.0 (0.3)
Discharged on day of surgery	161 (95.8%)	11 (4.5%)
Repeated surgery within 1 year	9 (5.4%)	14 (5.7%)

Supplementary table G: Per-protocol analysis of primary and secondary outcomes. Median values with interquartile ranges are shown for the visual analogue scales for leg pain, back pain and quality of life, the Oswestry Disability Index and the Physical and Mental Component Summaries of the SF-36 at the various time points divided per surgical technique. Between-group differences are shown which are adjusted for hospital and baseline scores. Odds ratios of the Likert-scales are also adjusted for hospital.

Variable	1 day			2 weeks			4 weeks			6 weeks		
	PTED (N=164)	Open microdiscectomy (N=231)	Between-group difference (95% CI)	PTED (N=165)	Open microdiscectomy (N=231)	Between-group difference (95% CI)	PTED (N=165)	Open microdiscectomy (N=232)	Between-group difference (95% CI)	PTED (N=166)	Open microdiscectomy (N=239)	Between-group difference (95% CI)
Primary outcome												
VAS for leg pain	11.0 (36.0)	13.0 (33.0)	-1.0 (-5.2 to 3.1)	24.0 (44.0)	26.0 (46.0)	-0.3 (-5.0 to 3.8)	23.0 (49.0)	25.0 (49.0)	2.1 (-1.8 to 6.0)	18.0 (45.0)	21.0 (42.0)	1.0 (-2.7 to 4.6)
Secondary outcome												
Oswestry Disability Index	48.0 (33.2)	60.0 (22.9)	11.8 (8.5 to 14.8)	32.0 (29.0)	42.0 (28.9)	7.0 (4.7 to 9.8)	26.0 (24.3)	30.0 (26.7)	5.4 (3.4 to 7.5)	20.0 (26.8)	24.4 (24.4)	4.0 (1.9 to 6.0)
VAS for back pain	46.0 (47.0)	47.0 (43.0)	5.7 (1.4 to 10.5)	28.0 (36.0)	30.0 (38.0)	2.2 (-1.5 to 5.6)	25.0 (39.0)	25.0 (39.0)	2.0 (-1.2 to 5.5)	22.0 (40.0)	22.0 (41.0)	1.4 (-2.1 to 4.8)
VAS for quality of life	61.0 (27.0)	52.0 (27.0)	-8.0 (-11.5 to -4.5)	63.0 (29.0)	55.0 (34.0)	-7.3 (-10.3 to -4.4)	64.0 (28.0)	57.0 (30.0)	-8.4 (-11.1 to -5.6)	70.0 (25.0)	64.0 (27.0)	-8.3 (-10.9 to -5.7)
SF-36 Physical Component Summary	-	-	-	38.0 (11.2)	36.9 (9.4)	-1.5 (-2.7 to -0.3)	40.9 (13.3)	37.8 (11.6)	-1.7 (-2.9 to -0.5)	43.0 (13.3)	40.5 (12.9)	-2.1 (-3.3 to -0.9)
SF-36 Mental Component Summary	-	-	-	44.9 (18.7)	42.9 (20.1)	-1.2 (-3.0 to 0.6)	51.2 (15.7)	48.4 (16.5)	-1.5 (-2.9 to -0.1)	53.7 (14.7)	50.1 (15.7)	-2.1 (-3.4 to -0.1)
Proportion recovered from symptoms	78 (47.6%)	104 (45.0%)	OR 1.2 (0.7 to 2.2)	87 (52.7%)	111 (48.1%)	OR 1.4 (0.8 to 2.5)	94 (57.0%)	127 (54.7%)	OR 1.1 (0.6 to 2.0)	110 (66.3%)	140 (58.6%)	OR 1.6 (0.9 to 2.9)
Proportion recovered from leg pain	105 (64.0%)	145 (62.8%)	OR 1.1 (0.6 to 2.0)	96 (58.2%)	138 (59.7%)	OR 0.9 (0.5 to 1.6)	100 (60.6%)	148 (63.8%)	OR 0.8 (0.4 to 1.4)	116 (69.9%)	159 (66.5%)	OR 1.2 (0.7 to 2.2)
Proportion satisfied with change in symptoms	-	-	-	96 (58.2%)	117 (50.6%)		101 (61.2%)	131 (56.5%)	OR 1.3 (0.7 to 2.3)	109 (65.7%)	140 (58.6%)	OR 1.5 (0.8 to 2.7)
Proportion satisfied with result of treatment	-	-	-	104 (63.0%)	136 (58.9%)		110 (66.7%)	136 (58.6%)	OR 1.6 (0.9 to 2.9)	118 (71.1%)	147 (61.5%)	OR 1.8 (1.0 to 3.4)

	3 months			6 months			9 months			12 months		
	PTED (N=165)	Open microdiscectomy (N=236)	Between-group difference (95%CI)	PTED (N=159)	Open microdiscectomy (N=221)	Between-group difference (95%CI)	PTED (N=153)	Open microdiscectomy (N=217)	Between-group difference (95%CI)	PTED (N=164)	Open microdiscectomy (N=227)	Between-group difference (95%CI)
Primary outcome												
VAS for leg pain	13.0 (34.0)	17.0 (40.0)	1.6 (-2.1 to 5.2)	11.0 (24.0)	15.0 (44.0)	6.2 (2.4 to 9.9)	10.0 (24.0)	15.0 (52.0)	7.7 (3.3 to 11.8)	7.0 (29.0)	18.0 (53.0)	8.3 (4.1 to 12.8)
Secondary outcome												
Oswestry Disability Index	14.0 (22.7)	15.6 (22.0)	2.7 (0.5 to 4.8)	11.1 (16.0)	14.0 (24.0)	3.7 (1.6 to 6.0)	8.0 (17.8)	12.0 (26.0)	6.2 (4.0 to 8.4)	10.0 (17.0)	12.0 (24.9)	5.8 (3.4 to 8.3)
VAS for back pain	19.0 (42.0)	23.0 (45.0)	3.0 (-0.9 to 6.7)	15.0 (37.0)	25.0 (47.0)	7.3 (3.5 to 11.1)	15.0 (28.0)	26.0 (50.0)	11.3 (7.6 to 15.0)	16.0 (35.0)	22.0 (52.0)	6.9 (2.8 to 10.9)
VAS for quality of life	70.0 (25.0)	68.0 (26.0)	-5.4 (-8.0 to -2.6)	74.0 (22.0)	68.0 (27.0)	-5.3 (-8.4 to -2.1)	74.0 (21.0)	70.0 (27.0)	-6.9 (-9.6 to -4.1)	75.0 (26.0)	69.0 (28.0)	-7.0 (-10.0 to -4.0)
SF-36 Physical Component Summary	46.9 (14.3)	44.9 (12.6)	-1.6 (-2.7 to -0.3)	48.4 (13.2)	45.8 (14.1)	-2.1 (-3.4 to -0.9)	50.5 (14.6)	47.6 (14.6)	-3.0 (-4.4 to -1.7)	50.9 (14.5)	46.3 (15.3)	-3.0 (-4.3 to -1.7)
SF-36 Mental Component Summary	54.3 (11.0)	51.5 (14.2)	-2.4 (-3.7 to -1.2)	54.2 (9.2)	54.2 (12.0)	-2.0 (-3.4 to -0.7)	55.0 (9.2)	52.9 (14.2)	-3.2 (-4.5 to -1.8)	54.6 (7.2)	53.9 (10.7)	-2.4 (-3.6 to -1.1)
Proportion recovered from symptoms	120 (72.7%)	155 (65.7%)	OR 1.4 (0.8 to 2.8)	117 (73.6%)	142 (64.3%)	OR 1.8 (0.9 to 3.4)	123 (80.4%)	139 (64.1%)	OR 3.0 (1.5 to 5.9)	129 (78.7%)	143 (63.0%)	OR 2.8 (1.4 to 5.5)
Proportion recovered from leg pain	125 (75.8%)	163 (69.1%)	OR 1.5 (0.8 to 2.9)	122 (76.7%)	152 (68.8%)	OR 1.7 (0.9 to 3.3)	129 (84.3%)	151 (69.6%)	OR 3.1 (1.5 to 6.2)	130 (79.3%)	154 (67.8%)	OR 2.2 (1.1 to 4.2)
Proportion satisfied with change in symptoms	121 (73.3%)	146 (61.9%)	OR 2.0 (1.1 to 3.8)	116 (73.0%)	131 (59.3%)	OR 2.4 (1.3 to 4.5)	119 (77.8%)	136 (62.7%)	OR 2.7 (1.4 to 5.3)	125 (76.2%)	136 (59.9%)	OR 3.0 (1.6 to 5.7)
Proportion satisfied with result of treatment	125 (75.8%)	161 (68.2%)	OR 1.6 (0.8 to 3.0)	121 (76.1%)	143 (64.7%)	OR 2.2 (1.1 to 4.2)	122 (79.7%)	146 (67.3%)	OR 2.3 (1.2 to 4.7)	130 (79.3%)	147 (64.8%)	OR 2.8 (1.5 to 5.6)

Supplementary table H: Analysis of primary and secondary outcomes of all patients including learning curve cases according to the intention-to-treat analysis. Median values with interquartile ranges are shown for the visual analogue scales for leg pain, back pain and quality of life, the Oswestry Disability Index and the Physical and Mental Component Summaries of the SF-36 at the various time points divided per surgical technique. Between-group differences are shown which are adjusted for hospital and baseline scores. Odds ratios of the Likert-scales are also adjusted for hospital.

Variable	1 day			2 weeks			4 weeks			6 weeks		
	PTED (N=288)	Open microdiscectomy (N=242)	Between-group difference (95% CI)	PTED (N=289)	Open microdiscectomy (N=240)	Between-group difference (95% CI)	PTED (N=290)	Open microdiscectomy (N=241)	Between-group difference (95% CI)	PTED (N=292)	Open microdiscectomy (N=249)	Between-group difference (95% CI)
Primary outcome												
VAS for leg pain	11.0 (30.0)	13.0 (32.0)	-0.6 (-4.3 to 3.2)	24.0 (47.0)	25.0 (45.0)	-1.7 (-5.2 to 1.5)	22.0 (45.0)	25.0 (47.0)	1.7 (-1.7 to 4.9)	17.0 (40.0)	21.0 (42.0)	0.8 (-2.4 to 4.1)
Secondary outcome												
Oswestry Disability Index	48.9 (30.7)	60.0 (23.6)	9.0 (6.2 to 11.8)	33.3 (30.0)	42.0 (29.2)	4.3 (2.1 to 6.7)	26.0 (22.0)	30.0 (26.5)	3.9 (2.2 to 5.6)	20.0 (25.7)	24.0 (24.4)	3.2 (1.6 to 4.9)
VAS for back pain	40.0 (43.0)	47.0 (44.0)	6.5 (2.6 to 10.3)	28.0 (37.0)	30.0 (37.0)	1.9 (-1.2 to 5.1)	23.0 (39.0)	24.5 (39.0)	1.1 (-1.6 to 4.0)	21.0 (38.0)	22.0 (41.0)	2.2 (-0.5 to 5.0)
VAS for quality of life	58.0 (26.0)	51.0 (27.0)	-5 (-8.0 to -2.4)	61.0 (28.0)	56.0 (35.0)	-4.8 (-7.5 to -2.1)	64.0 (28.0)	58.0 (30.0)	-6.1 (-8.8 to -3.9)	70.0 (27.0)	64.0 (27.0)	-8.4 (-10.8 to -3.3)
SF-36 Physical Component Summary	-	-	-	37.2 (10.1)	36.9 (9.4)	-0.6 (-1.7 to 0.4)	40.1 (13.0)	37.9 (11.8)	-1.2 (-2.2 to -0.1)	42.7 (13.4)	41.1 (13.0)	-1.7 (-2.6 to -0.7)
SF-36 Mental Component Summary	-	-	-	45.9 (19.6)	42.7 (19.7)	-1.0 (-2.7 to 0.5)	50.6 (16.6)	48.3 (16.7)	-0.9 (-2.2 to 0.4)	53.0 (15.4)	50.1 (15.9)	-1.7 (-2.8 to -0.6)
Proportion recovered from symptoms	139 (48.3 %)	111 (45.9 %)	OR 1.2 (0.7 to 2.1)	145 (50.2 %)	118 (49.2 %)	OR 1.1 (0.7 to 1.9)	164 (56.6 %)	135 (56.0 %)	OR 1.0 (0.6 to 1.7)	183 (62.7 %)	148 (59.4 %)	OR 1.2 (0.7 to 2.0)
Proportion recovered from leg pain	184 (63.9 %)	152 (62.8 %)	OR 1.0 (0.6 to 1.8)	167 (57.8 %)	144 (60.0 %)	OR 0.8 (0.5 to 1.4)	180 (62.1 %)	156 (64.7 %)	OR 0.8 (0.5 to 1.4)	198 (67.8 %)	168 (67.5 %)	OR 1.0 (0.6 to 1.7)
Proportion satisfied with change in symptoms	-	-	-	166 (57.4 %)	124 (51.7 %)	OR 1.5 (0.9 to 2.5)	174 (60.0 %)	139 (57.7 %)	OR 1.2 (0.7 to 2.0)	186 (63.7 %)	149 (59.8 %)	OR 1.3 (0.8 to 2.2)
Proportion satisfied with result of treatment	-	-	-	179 (61.9 %)	140 (58.3 %)	OR 1.2 (0.7 to 2.1)	191 (65.9 %)	142 (58.9 %)	OR 1.6 (0.9 to 2.8)	201 (68.8 %)	155 (62.2 %)	OR 1.7 (1.0 to 2.8)

Variable	3 months			6 months			9 months			12 months		
	PTED (N=289)	Open microdiscectomy (N=249)	Between-group difference (95% CI)	PTED (N=285)	Open microdiscectomy (N=235)	Between-group difference (95% CI)	PTED (N=278)	Open microdiscectomy (N=232)	Between-group difference (95% CI)	PTED (N=287)	Open microdiscectomy (N=245)	Between-group difference (95% CI)
Primary outcome												
VAS for leg pain	11.0 (37.0)	17.0 (40.0)	0.8 (-2.3 to 4.1)	12.0 (28.0)	15.0 (44.0)	3.8 (0.8 to 7.2)	10.0 (33.0)	15.0 (50.0)	4.4 (0.8 to 8.1)	8.0 (33.0)	17.5 (51.0)	4.5 (0.6 to 8.4)
Secondary outcome												
Oswestry Disability Index	13.3 (20.4)	15.6 (21.7)	2.0 (0.3 to 3.9)	10.0 (17.8)	14.0 (22.7)	2.7 (0.8 to 4.6)	8.0 (20.0)	12.7 (26.0)	3.8 (1.8 to 5.7)	11.1 (18.0)	13.3 (25.4)	3.7 (1.5 to 5.8)
VAS for back pain	17.0 (42.0)	23.5 (44.0)	2.8 (-0.1 to 5.7)	16.0 (41.0)	24.5 (47.0)	6.1 (3.0 to 9.3)	15.0 (35.0)	26.0 (50.0)	8.8 (5.5 to 12.3)	17.0 (40.0)	22.0 (51.0)	4.0 (0.8 to 7.3)
VAS for quality of life	72.0 (25.0)	68.0 (26.0)	-4.1 (-6.4 to -1.9)	74.0 (24.0)	68.0 (27.0)	-4.0 (-6.8 to -1.5)	74.0 (25.0)	70.5 (26.0)	-3.3 (-5.9 to -1.0)	75.0 (27.0)	69.5 (28.0)	-4.8 (-7.2 to -2.5)
SF-36 Physical Component Summary	47.0 (15.9)	45.0 (12.5)	-1.4 (-2.4 to -0.4)	48.9 (12.9)	46.1 (14.7)	-1.9 (-2.9 to -0.9)	49.3 (15.2)	47.3 (14.5)	-1.9 (-3.1 to -0.8)	50.2 (15.0)	46.4 (15.3)	-1.8 (-2.9 to -0.8)
SF-36 Mental Component Summary	54.3(11.2)	51.4 (14.4)	-1.7 (-2.8 to -0.5)	53.8 (9.0)	53.8 (12.2)	-1.4 (-2.5 to -0.2)	54.6 (9.2)	52.8 (14.2)	-1.8 (-3.0 to -0.6)	54.5 (7.7)	53.8 (10.5)	-1.1 (-2.3 to 0)
Proportion recovered from symptoms	206 (71.3 %)	164 (65.9 %)	OR 1.3 (0.8 to 2.2)	202 (70.9 %)	154 (65.5%)	OR 1.4 (0.8 to 2.4)	199 (71.6 %)	151 (65.1 %)	OR 1.6 (0.9 to 2.7)	211 (73.5 %)	157 (64.1 %)	OR 1.8 (1.1 to 3.2)
Proportion recovered from leg pain	216 (74.7 %)	172 (69.1 %)	OR 1.4 (0.8 to 2.3)	214 (75.1 %)	165 (70.2 %)	OR 1.5 (0.9 to 2.5)	210 (75.5 %)	164 (70.7 %)	OR 1.5 (0.9 to 2.5)	216 (75.3 %)	169 (69.0 %)	OR 1.5 (0.9 to 2.6)
Proportion satisfied with change in symptoms	206 (71.3 %)	156 (62.7 %)	OR 1.8 (1.1 to 3.0)	200 (70.2 %)	143 (60.9 %)	OR 2.0 (1.2 to 3.4)	201 (72.3%)	147 (63.4 %)	OR 1.9 (1.1 to 3.3)	199 (69.3%)	150 (61.5 %)	OR 1.8 (1.1 to 3.0)
Proportion satisfied with result of treatment	213 (71.6 %)	172 (69.1 %)	OR 1.4 (0.8 to 2.4)	207 (72.6 %)	155 (66.0 %)	OR 1.8 (1.0 to 3.1)	207 (74.5%)	159 (68.5 %)	OR 1.7 (1.0 to 3.0)	209 (72.8 %)	161 (66.0 %)	OR 1.7 (1.0 to 3.0)

Supplementary table I: Analyses using the numeric rating scale instead of the visual-analogue scale according to the intention-to-treat and per protocol analysis. Median numeric rating scale scores with interquartile ranges for leg pain, back pain and quality of life are shown at the various time points divided per surgical technique. Between-group differences are shown which are adjusted for hospital and baseline scores.

Variable	1 day			2 weeks			4 weeks			6 weeks		
	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)
Intention-to-treat	N=137	N=180		N=142	N=182		N=145	N=188		N=149	N=201	
NRS for leg pain	2 (4)	2 (4)	-0.1 (-0.6 to 0.4)	3 (4)	3.0 (4.0)	0.1 (-0.4 to 0.6)	3 (4)	3 (4)	0.2 (-0.2 to 0.5)	2 (4)	3 (4)	0.2 (-0.2 to 0.6)
NRS for back pain	5 (4)	5 (4)	0.5 (0.1 to 1.0)	3 (3)	4.0 (3.0)	0.3 (-0.1 to 0.6)	3 (4)	3 (3)	0.2 (-0.1 to 0.6)	3 (4)	3 (3)	0.2 (-0.1 to 0.6)
NRS for quality of life	6 (2)	6 (2)	-0.3 (-0.6 to -0.1)	6 (3)	6.0 (2.0)	-0.4 (-0.6 to -0.1)	7 (2)	6 (2)	-0.5 (-0.7 to -0.2)	7 (2)	7 (3)	-0.6 (-0.8 to -0.4)
Per-protocol	N=133	N=169		N=138	N=173		N=141	N=179		N=145	N=191	
NRS for leg pain	2 (4)	2 (4)	-0.1 (-0.7 to 0.4)	3 (4)	3.0 (4.0)	0.1 (-0.4 to 0.6)	3 (4)	3 (4)	0.2 (-0.2 to 0.6)	2 (5)	3 (4)	0.3 (-0.1 to 0.6)
NRS for back pain	5 (4)	5 (4)	0.7 (0.2 to 1.1)	3 (3)	4.0 (4.0)	0.3 (-0.1 to 0.7)	3 (4)	3 (3)	0.3 (-0.1 to 0.7)	3 (3)	3 (3)	0.3 (-0.1 to 0.7)
NRS for quality of life	6 (2)	6 (2)	-0.3 (-0.6 to 0)	7 (3)	6.0 (2.0)	-0.4 (-0.6 to -0.1)	7 (2)	7 (2)	-0.5 (-0.7 to -0.2)	7 (2)	7 (3)	-0.6 (-0.8 to -0.4)

Variable	3 months			6 months			9 months			12 months		
	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)	PTED	Open microdiscectomy	Between-group difference (95% CI)
Intention-to-treat	N=152	N=209		N=155	N=210		N=150	N=224		N=168	N=245	
NRS for leg pain	2 (4)	3 (4)	0.3 (-0.1 to 0.7)	2 (3)	2 (4)	0.4 (0 to 0.8)	2 (4)	3 (5)	0.6 (0.2 to 1.1)	1 (4)	2 (6)	0.6 (0.2 to 1.1)
NRS for back pain	3 (4)	3 (4)	0.3 (0 to 0.7)	2 (4)	3 (4)	0.5 (0.1 to 1.0)	2 (3)	3 (4)	1.0 (0.6 to 1.4)	2 (3)	3 (5)	0.6 (0.1 to 1.1)
NRS for quality of life	7 (2)	7 (2)	-0.2 (-0.5 to 0)	7 (2)	7 (2)	-0.3 (-0.5 to 0)	7 (1)	7 (2)	-0.4 (-0.7 to -0.2)	8 (1)	7 (2)	-0.5 (-0.8 to -0.2)
Per-protocol	N=148	N=196		N=151	N=196		N=145	N=209		N=164	N=227	
NRS for leg pain	3 (4)	2 (4)	0.3 (-0.1 to 0.8)	2 (3)	2 (4)	0.5 (0 to 0.9)	2 (4)	3 (5)	0.7 (0.2 to 1.1)	1 (4)	2 (6)	0.7 (0.2 to 1.2)
NRS for back pain	3 (4)	3 (4)	0.3 (0 to 0.7)	2 (4)	3 (4)	0.7 (0.2 to 1.1)	2 (3)	3 (5)	1.0 (0.6 to 1.5)	2 (3)	3 (5)	0.7 (0.3 to 1.1)
NRS for quality of life	7 (2)	7 (2)	-0.2 (-0.4 to 0)	7 (1)	7 (2)	-0.3 (-0.6 to -0.1)	7 (1)	7 (2)	-0.4 (-0.7 to -0.2)	8 (2)	7 (2)	-0.5 (-0.8 to -0.3)