

### Appendix 3. Detailed Study Outcomes

Anatomical Region / Tendon	Author (Year)	Study Design	Level of evidence	Sample size (n)	Tenotomy Method	Comparator Group	Outcomes for Tenotomy Group	
							Pain	Patient Reported Outcome
Lateral Elbow	Altahawi, et al (2020) <sup>1</sup>	Retrospective Cohort Study	3	23	TENEX	Surgical tenotomy	Oxford Elbow Score pain improved from 60 to 12 at 12 mos	QDASH improved from 56 to 12 at 12 mos
	Koh, et al* (2013) <sup>28</sup> (original study)	Case Series	4	20	TENEX		VAS improved from 5.5 to 3.3, 3.0, 2.0, 1.0, and 0.5 at 1 week, 1 mo, 3 mos, 6 mos, & 1 year	DASH-C improved from 24.2 to 12.5, 8.9, 5.8, and 3.3 at 1 mo, 3 mos, 6 mos, and 1 year
	Seng, et al (2016) <sup>37</sup> (3-year f/u)			20			VAS improved from 5.5 to 0.0 at 36 mos	DASH-C improved from 24.2 to 6.3 at 1 mo, and 0 at 3-, 6-, and 12-mos
	Ang, et al (2021) <sup>4</sup> (90 mo f/u)			19			VAS improved from 5.5 to 0 at 90 months	DASH-C improved from 24.2 at baseline to 0 at 36 months.
								DASH-work improved from 25.0 to 0 36 mos
								DASH-C improved from 24.2 to 0.8 at 90 months
	Barnes, et al (2015) <sup>6</sup>	Prospective Cohort Study	4	12	TENEX		VAS improved from 6.4 to 0.7 at 12 mos	QDASH improved from 44.1 to 8.6 at 12 mos
							Mayo Elbow Performance Score improved from 59.1 to 83.4 at 12 mos	
Battista et al (2018) <sup>7</sup>	Case Series	4	7	TENEX		VAS improved from 7.9 to 1.1 at 24 mos	ASES improved from 55.6 to 94.1 at 24 months	
Boden, et al (2019) <sup>8</sup> †	Retrospective Cohort Study	2	25	TENEX	TENEX + PRP	VAS improved from 5.5 to 2.2 at 10 mos	QDASH improved from 35.9 to 12.5 at 10 mos	
Bureau, et al (2022) <sup>11</sup> †	Randomized Clinical Trial	1	31	PNT	Surgical debridement	PRTEE improved by 33.8 at 12 mos	QDASH improved by 29.4 at 12 mos	

	Chalian, et al (2021) <sup>12</sup>	Retrospective Cohort Study	4	37	TENEX		PRTEE improved from 28.7 to 9.9 at 531 days	DASH score improved from 56.2 to 14.5 at 531 days
	Fick, et al (2021) <sup>20</sup>	Retrospective Cohort Study	4	87	TENEX		Improved from “moderate/daily” to “no pain” at long-term follow up via Mayo Performance Scale	SF-12 PCS function and QOL improved from 36.7 to 48.0 at long term follow up
	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	6	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years	
	Lavallee and Bush (2021) <sup>30</sup>	Prospective Cohort Study	3	22	TENEX		VAS improved from 7.2 to 1.4 at 1 year	DASH score improved from 41.5 to 10.4 at 1 year
	Martin, et al (2019) <sup>32</sup> ‡	Randomized Clinical Trial	3	51	PNT	PNT + PRP	**VAS improved from 5.87 to 1.73 at 20 mos	DASH-E improved from 42.76 to 14.47 at 20 mos
	Nakagawa, et al (2023) <sup>35</sup> †	Retrospective Cohort Study	3	15	TENEX	TENEX + amniotic membrane allograft injection	VAS improved from 7.2 to 2.2 at 12 mos	
	Rupe, et al (2023) <sup>36</sup>	Retrospective Cohort Study	4	52	PNT	PRP Injection	Ortho Pain 4 improved from 5.94 to 3.32 at 12 wks; 21.9% reported complete resolution of pain, and 40.6% reported at least 90% improvement in pain.	
	Stover, et al (2019) <sup>39</sup>	Retrospective Cohort Study	4	104	TENEX		87% of patients had “moderate/daily” or “severe/constant” pain improved to 11% at 2.7-year f/u. 88% of patients had either “none” or “mild/occasional” pain at 2.7-year f/u	
Medial Elbow	Barnes, et al (2015) <sup>6</sup>	Prospective Cohort Study	4	7	TENEX		VAS improved from 6.4 to 0.7 at 12 mos	Quick DASH improved from 44.1 to 8.6 at 12 mos

	Boden, et al (2019) <sup>8</sup> †	Retrospective Cohort Study	2	5	TENEX	TENEX + PRP	VAS improved from 5.5 to 2.2 at 10 mos	QDASH improved from 35.9 to 12.5 at 10 mos
	Fick, et al (2021) <sup>20</sup>	Retrospective Cohort Study	4	87	TENEX		Improved from “moderate/daily” to “no pain” at long-term follow up via Mayo Performance Scale	SF-12 PCS function and QOL improved from 36.7 to 48.0 at long term follow up
	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	6	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years	
	Lavallee and Bush (2021) <sup>30</sup>	Prospective Cohort Study	3	3	TENEX		VAS improved from 7.2 to 1.4 at 1 year	DASH improved from 41.5 to 10.4 at 1 year.
	Martin, et al (2019) <sup>32</sup> †	Randomized Clinical Trial	3	51	PNT	PNT + PRP	**VAS improved from 5.87 to 1.73 at 20 mos	DASH improved from 42.76 to 14.47 at 20 mos
	Stover, et al (2019) <sup>39</sup>	Retrospective Cohort Study	4	19	TENEX		93% of patients had “moderate/daily” or “severe/constant” pain at baseline, improving to 100% of patients reporting “none” or “mild/occasional” pain at 2.7 year f/u	
Achilles	Fick, et al (2021) <sup>20</sup>	Retrospective Cohort Study	4	57	TENEX		Mean scores improved from “moderate/daily” to “mild/occasional” via AOFAS.	SF-12 PCS function and QOL improved from 36.8 to 49.2 at long term f/u for midportion Achilles.
	Lavallee and Bush (2021) <sup>30</sup>	Prospective Cohort Study	3	27	TENEX		VAS improved from 7.2 to 1.4 at 1 year	Lower Extremity Functional Score improved from 42.5 to 65.8 at 1 yr
Gluteal	Baker and Mahoney (2020) <sup>5</sup>	Case Series	4	29	TENEX		VAS improved from 5.86 to 2.82 at 18 mos	Harris Hip Score improved from 60.63 to 77.47 at 18 mos
	Jacobson, et al (2016) <sup>25</sup> †	Prospective Study with Comparator	2	15	PNT	PRP	Pain scores improved from 32.4 to 15.2 at 17.6 days; Follow-up of 14/15 of PNT group showed	

		Group, not randomized					10/14 (71%) had sustained improvement at 128 days	
	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	6	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years	
Patellar	Fick, et al (2021) <sup>20</sup>	Retrospective Cohort Study	4	38	TENEX		Pain scores improved from “moderate/daily” to “mild/occasional” via Kujala Pain Scale.	SF-12 PCS function and QOL improved from 41.7 to 49.2 at long term follow up.
	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	2	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years	
	Lavallee and Bush (2021) <sup>30</sup>	Prospective Cohort Study	3	9	TENEX		VAS improved from 7.2 to 1.4 at 1 year	Lower Extremity Functional Score improved from 42.5 to 65.8 at 1 yr
Triceps	Stover, et al (2019) <sup>39</sup>	Retrospective Cohort Study	4	8	TENEX		100% of patients had “moderate/daily” or “severe/constant” pain at baseline, improving to 100% of patients reporting “none” or “mild/occasional” pain at short-term follow up.	
Plantar Fascia	Fick, et al (2021) <sup>20</sup>	Retrospective Cohort Study	4	80	TENEX		Pain scores improved from “moderate/daily” to “mild/occasional” via AOFAS.	SF-12 PCS function and QOL improved from 36.0 to 48.0 at long term follow up.
	Lavallee and Bush (2021) <sup>30</sup>	Prospective Cohort Study	3	41	TENEX		VAS improved from 7.2 to 1.4 at 1 year	Lower Extremity Functional Score improved from 42.5 to 65.8 at 1 yr.
Hamstring	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	2	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years	
Tensor Fascia Lata	Bradberry, et al (2018) <sup>9</sup>	Case Series	4	2	PNT		Case 1: Minimal improvement at 6 weeks; second procedure at 6 weeks with complete	

							resolution of pain at 2 wks. Case 2: Complete resolution of pain at 8-week f/u
Iliotibial Band	Wahezi, et al (2023) <sup>43</sup>	Retrospective Cohort Study	2	48	TENEX		Median NRS-11 improved from 9 to 5 at 1-yr with 70% endorsing pain relief, 57% improvement in side-lying, 78% improvement in sit-to-stand, and 66% improvement in walking tolerance.
Supraspinatus	Kirschner, et al (2021) <sup>27</sup> †	Randomized Clinical Trial	1	3	PNT	PNT + PRP	**VAS improved from 6.9 to 1.9 at 2 years

\* Articles by Seng, et al., and Ang, et al. were longitudinal follow up studies of the original research article by Koh, et al.

\*\* Authors reported results for all body regions in aggregate.

† No statistically significant difference between groups.

Abbreviations: DASH, Disabilities of the Arm, Shoulder and Hand; QDASH, Quick DASH; DASH-C, DASH Compulsory score; VAS, visual analog scale; ASES, American Shoulder Elbow Surgeons Shoulder Score; PNT, percutaneous needle tenotomy; PRTEE, Patient-rated tennis elbow evaluation; PRP, platelet-rich plasma; PCS, Physical Component Score; SF-12, Short-Form 12; QOL, quality of life; AOFAS, American Orthopedic Foot and Ankle Score; NRS, numeric rating scale