

Appendix

TABLE E-1 Effect of Sequential Soft-Tissue Sectioning on Subtalar Joint Drawer Measures in Group 1*

Drawer Direction/Foot Position	Mean Drawer Measurement ± SD (mm)						
	Intact	Minus LIER	Minus IIER	Minus MIER	Minus CFL	Minus CFL, CL	Minus CFL, CL, ITCL
Anterior drawer							
10° dorsiflexion	1.2 ± 0.9	1.5 ± 1.0	1.6 ± 1.0	1.7 ± 1.0	1.9 ± 1.1	2.1 ± 1.4	2.0 ± 1.6
Neutral	1.4 ± 0.9	1.6 ± 1.0	1.8 ± 0.9	1.7 ± 0.8	1.9 ± 1.5	2.3 ± 1.6	2.5 ± 1.8
10° plantar flexion	1.0 ± 0.8	0.8 ± 0.4	0.9 ± 0.3	1.1 ± 0.3	1.0 ± 0.5	0.9 ± 0.3	1.3 ± 0.6
20° plantar flexion	0.8 ± 0.5	1.1 ± 1.0	1.2 ± 1.1	1.2 ± 1.0	1.1 ± 0.9	1.3 ± 1.3	1.9 ± 1.7
Posterior drawer							
10° dorsiflexion	0.6 ± 0.4	0.7 ± 0.3	0.6 ± 0.2	0.7 ± 0.3	0.8 ± 0.4	0.8 ± 0.4	0.6 ± 0.3
Neutral	0.6 ± 0.4	0.9 ± 0.3	0.7 ± 0.2	0.8 ± 0.2	0.8 ± 0.3	0.9 ± 0.4	0.9 ± 0.4
10° plantar flexion	0.8 ± 0.4	0.9 ± 0.3	0.9 ± 0.4	0.8 ± 0.3	0.8 ± 0.3	1.0 ± 0.3	1.0 ± 0.7
20° plantar flexion	0.8 ± 0.3	0.8 ± 0.3	0.9 ± 0.2	1.0 ± 0.2	0.9 ± 0.2	1.1 ± 0.5	1.0 ± 0.4
Medial drawer							
10° dorsiflexion	0.8 ± 0.5	1.1 ± 0.6	1.0 ± 0.4	1.2 ± 0.6	1.4 ± 0.8	1.7 ± 1.0	1.6 ± 0.9
Neutral	1.5 ± 0.7	1.7 ± 0.8	1.7 ± 0.7	1.6 ± 0.8	1.5 ± 0.4	2.4 ± 1.4	2.2 ± 1.1
10° plantar flexion	1.5 ± 1.0	1.9 ± 1.2	2.0 ± 1.2	1.7 ± 0.5	1.6 ± 0.8	2.1 ± 0.9	2.3 ± 1.0
20° plantar flexion	1.5 ± 1.0	1.6 ± 0.9	1.6 ± 0.9	1.6 ± 0.5	1.5 ± 0.5	1.8 ± 0.8	2.4 ± 1.5
Lateral drawer							
10° dorsiflexion	0.9 ± 0.4	0.9 ± 0.4	1.0 ± 0.3	1.0 ± 0.4	1.1 ± 0.4	1.2 ± 0.4	1.3 ± 0.4
Neutral	1.3 ± 0.5	1.1 ± 0.3	1.2 ± 0.4	1.2 ± 0.3	1.3 ± 0.3	1.3 ± 0.5	1.7 ± 1.2
10° plantar flexion	1.1 ± 0.2	1.1 ± 0.2	1.4 ± 0.2	1.2 ± 0.2	1.2 ± 0.2	1.1 ± 0.1	1.5 ± 0.6
20° plantar flexion	1.1 ± 0.3	1.1 ± 0.4	1.2 ± 0.3	1.2 ± 0.3	1.2 ± 0.2	1.4 ± 0.7	1.3 ± 0.4

*Ligament sectioning order: (1) calcaneofibular (CFL), (2) cervical (CL), (3) interosseous talocalcaneal (ITCL). LIER = lateral root of inferior extensor retinaculum, IIER = intermediate root of inferior extensor retinaculum, and MIER = medial root of inferior extensor retinaculum.

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TABLE E-2 Effect of Sequential Soft-Tissue Sectioning on Subtalar Joint Drawer Measures in Group 2*

Drawer Direction/Foot Position	Mean Drawer Measurement ± SD (mm)						
	Intact	Minus LIER	Minus IIER	Minus MIER	Minus CL	Minus CL, ITCL	Minus CL, ITCL, CFL
Anterior drawer							
10° dorsiflexion	1.2 ± 0.4	1.6 ± 0.6	1.4 ± 0.4	1.8 ± 0.8	1.4 ± 0.5	1.9 ± 0.9	1.7 ± 0.7
Neutral	1.3 ± 0.6	1.7 ± 0.9	1.3 ± 0.6	1.7 ± 1.0	1.4 ± 0.7	1.8 ± 1.0	1.5 ± 0.6
10° plantar flexion	1.1 ± 0.5	1.3 ± 0.7	1.5 ± 1.0	1.5 ± 0.9	1.3 ± 0.8	1.5 ± 0.8	1.6 ± 0.9
20° plantar flexion	0.8 ± 0.3	0.9 ± 0.5	1.0 ± 0.5	0.8 ± 0.3	0.9 ± 0.3	0.9 ± 0.4	0.9 ± 0.4
Posterior drawer							
10° dorsiflexion	0.8 ± 0.2	0.8 ± 0.2	0.8 ± 0.2	0.8 ± 0.1	0.7 ± 0.2	0.9 ± 0.3	0.8 ± 0.2
Neutral	0.9 ± 0.2	0.9 ± 0.2	0.8 ± 0.1	0.8 ± 0.2	0.8 ± 0.2	0.9 ± 0.4	0.9 ± 0.2
10° plantar flexion	0.8 ± 0.2	0.9 ± 0.2	0.8 ± 0.2	1.0 ± 0.2	0.8 ± 0.2	0.8 ± 0.4	1.0 ± 0.2
20° plantar flexion	0.8 ± 0.2	0.8 ± 0.2	0.9 ± 0.1	1.0 ± 0.3	0.9 ± 0.3	1.0 ± 0.3	0.9 ± 0.3
Medial drawer							
10° dorsiflexion	1.1 ± 0.3	1.4 ± 0.5	1.2 ± 0.4	1.5 ± 0.5	1.2 ± 0.3	1.4 ± 0.4	1.6 ± 0.5
Neutral	1.5 ± 0.6	1.8 ± 0.6	1.5 ± 0.5	1.8 ± 0.6	1.5 ± 0.4	2.2 ± 0.7	1.7 ± 0.5
10° plantar flexion	1.6 ± 0.5	1.7 ± 0.6	1.9 ± 0.9	1.6 ± 0.5	1.7 ± 0.7	2.1 ± 0.8	2.2 ± 0.8
20° plantar flexion	1.2 ± 0.4	1.1 ± 0.3	1.2 ± 0.3	1.2 ± 0.4	1.3 ± 0.5	1.3 ± 0.4	1.4 ± 0.4
Lateral drawer							
10° dorsiflexion	0.9 ± 0.2	1.0 ± 0.2	1.0 ± 0.2	1.1 ± 0.2	1.0 ± 0.1	1.1 ± 0.2	1.2 ± 0.2
Neutral	1.1 ± 0.2	1.0 ± 0.3	1.1 ± 0.3	1.0 ± 0.3	1.0 ± 0.1	1.0 ± 0.3	1.2 ± 0.2
10° plantar flexion	1.2 ± 0.2	1.1 ± 0.3	1.2 ± 0.3	1.1 ± 0.3	1.1 ± 0.2	1.1 ± 0.3	1.4 ± 0.3
20° plantar flexion	1.0 ± 0.3	1.0 ± 0.2	1.1 ± 0.2	1.1 ± 0.3	1.0 ± 0.3	1.1 ± 0.3	1.1 ± 0.3

*Ligament sectioning order: (1) cervical (CL), (2) interosseous talocalcaneal (ITCL), (3) calcaneofibular (CFL). LIER = lateral root of inferior extensor retinaculum, IIER = intermediate root of inferior extensor retinaculum, and MIER = medial root of inferior extensor retinaculum.

TABLE E-3 Effect of Sequential Soft-Tissue Sectioning on Subtalar Joint Angulation in Group 1*

Foot Position	Mean Joint Angulation ± SD (deg)						
	Intact	Minus LIER	Minus IIER	Minus MIER	Minus CFL	Minus CFL, CL	Minus CFL, CL, ITCL
Inversion							
10° dorsiflexion	3.0 ± 0.9	3.2 ± 1.4	3.8 ± 1.5	5.3 ± 2.7	8.9 ± 3.0	10.4 ± 3.5	13.1 ± 6.8
Neutral	7.0 ± 1.8	6.9 ± 2.5	6.8 ± 1.8	7.4 ± 1.6	10.0 ± 2.7	12.7 ± 3.2	12.7 ± 7.1
10° plantar flexion	6.6 ± 1.6	8.8 ± 3.1	8.7 ± 1.9	8.8 ± 2.5	11.6 ± 5.0	14.0 ± 4.3	16.3 ± 8.4
20° plantar flexion	10.7 ± 2.5	11.3 ± 1.6	12.0 ± 1.6	11.7 ± 2.4	14.6 ± 3.0	14.7 ± 4.2	19.2 ± 7.6
Eversion							
10° dorsiflexion	7.6 ± 4.3	8.0 ± 3.9	7.5 ± 3.8	6.7 ± 4.1	7.5 ± 3.5	7.8 ± 3.9	7.9 ± 3.4
Neutral	4.8 ± 4.1	6.2 ± 4.9	6.8 ± 4.1	6.9 ± 5.4	7.6 ± 4.3	7.4 ± 5.5	8.3 ± 4.6
10° plantar flexion	4.1 ± 1.8	2.3 ± 1.5	3.9 ± 1.0	2.9 ± 1.0	3.7 ± 1.4	3.3 ± 2.0	4.1 ± 2.0
20° plantar flexion	2.9 ± 1.6	2.7 ± 2.4	2.7 ± 3.1	2.8 ± 3.0	2.0 ± 2.1	3.0 ± 2.9	2.8 ± 3.2
Internal rotation							
10° dorsiflexion	3.6 ± 1.4	5.2 ± 2.9	4.8 ± 3.2	5.3 ± 3.2	5.2 ± 2.5	6.1 ± 3.6	6.7 ± 3.2
Neutral	5.5 ± 3.2	5.5 ± 3.1	5.3 ± 2.5	6.2 ± 4.0	6.0 ± 3.7	7.4 ± 4.3	8.2 ± 5.2
10° plantar flexion	4.0 ± 1.2	3.8 ± 0.7	4.4 ± 1.1	4.6 ± 1.1	4.4 ± 1.4	5.1 ± 1.9	5.9 ± 2.1
20° plantar flexion	4.5 ± 2.1	4.6 ± 2.5	4.8 ± 2.5	4.8 ± 2.3	4.2 ± 2.2	5.6 ± 3.4	5.8 ± 3.5
External rotation							
10° dorsiflexion	3.5 ± 0.9	4.0 ± 0.8	4.2 ± 0.9	4.6 ± 0.7	6.1 ± 2.4	6.7 ± 2.0	6.6 ± 2.2
Neutral	5.3 ± 1.2	4.9 ± 1.1	5.4 ± 1.9	5.5 ± 0.9	6.6 ± 2.3	8.2 ± 2.3	8.2 ± 2.8
10° plantar flexion	4.3 ± 0.7	4.7 ± 1.1	5.5 ± 0.8	4.9 ± 0.4	6.3 ± 1.5	6.5 ± 1.5	7.7 ± 0.5
20° plantar flexion	4.8 ± 2.0	5.0 ± 2.9	5.0 ± 2.6	5.5 ± 2.5	6.0 ± 2.4	7.1 ± 2.8	8.4 ± 4.1

*Ligament sectioning order: (1) calcaneofibular (CFL), (2) cervical (CL), (3) interosseous talocalcaneal (ITCL). LIER = lateral root of inferior extensor retinaculum, IIER = intermediate root of inferior extensor retinaculum, and MIER = medial root of inferior extensor retinaculum.

TABLE E-4 Effect of Sequential Soft-Tissue Sectioning on Subtalar Joint Angulation in Group 2*

Foot Position	Mean Joint Angulation ± SD (deg)						
	Intact	Minus LIER	Minus IIER	Minus MIER	Minus CL	Minus CL, ITCL	Minus CL, ITCL, CFL
Inversion							
10° dorsiflexion	4.6 ± 1.4	5.4 ± 1.7	4.7 ± 1.9	5.3 ± 1.6	4.4 ± 1.9	5.5 ± 1.5	10.8 ± 5.0
Neutral	7.4 ± 1.6	8.4 ± 1.7	7.0 ± 2.1	8.0 ± 2.4	6.5 ± 1.7	8.7 ± 2.6	13.2 ± 4.7
10° plantar flexion	9.0 ± 2.0	10.2 ± 1.8	9.7 ± 2.5	9.4 ± 2.7	9.5 ± 2.3	10.1 ± 4.2	15.1 ± 4.0
20° plantar flexion	10.8 ± 2.8	11.5 ± 2.9	12.0 ± 2.7	11.3 ± 2.3	13.6 ± 3.4	13.3 ± 3.6	16.9 ± 3.9
Everson							
10° dorsiflexion	5.9 ± 2.5	5.9 ± 2.3	6.3 ± 2.6	6.2 ± 2.6	6.3 ± 2.6	6.4 ± 2.5	6.7 ± 3.1
Neutral	4.4 ± 2.4	4.4 ± 1.8	5.8 ± 2.5	4.9 ± 2.3	6.0 ± 2.4	5.0 ± 2.2	5.9 ± 2.5
10° plantar flexion	4.5 ± 2.3	3.6 ± 2.0	4.3 ± 1.8	3.8 ± 1.4	4.6 ± 2.4	3.9 ± 2.2	5.0 ± 2.5
20° plantar flexion	2.4 ± 1.2	1.6 ± 0.7	1.4 ± 0.7	2.1 ± 1.7	1.4 ± 1.6	1.8 ± 1.3	1.7 ± 1.0
Internal rotation							
10° dorsiflexion	6.1 ± 4.9	7.0 ± 4.4	6.5 ± 4.6	6.9 ± 4.2	6.5 ± 4.5	7.3 ± 4.4	7.7 ± 4.6
Neutral	4.8 ± 1.5	4.9 ± 1.6	4.3 ± 1.5	4.9 ± 1.9	4.9 ± 1.6	5.7 ± 2.3	5.7 ± 2.4
10° plantar flexion	4.0 ± 1.4	4.3 ± 1.5	4.6 ± 1.8	4.4 ± 1.2	4.1 ± 1.6	4.6 ± 1.6	5.1 ± 1.5
20° plantar flexion	3.2 ± 0.9	3.4 ± 1.0	3.3 ± 0.9	3.3 ± 1.3	3.3 ± 1.2	4.0 ± 1.5	3.8 ± 1.6
External rotation							
10° dorsiflexion	4.4 ± 1.3	4.8 ± 1.0	4.3 ± 1.2	4.9 ± 1.3	4.4 ± 1.8	5.6 ± 1.3	5.8 ± 2.0
Neutral	4.4 ± 1.0	5.5 ± 1.6	4.9 ± 1.5	5.2 ± 1.6	4.4 ± 1.5	6.3 ± 2.3	6.5 ± 2.1
10° plantar flexion	4.6 ± 1.4	4.9 ± 2.4	4.9 ± 1.8	4.9 ± 2.0	5.1 ± 2.0	6.4 ± 2.2	6.7 ± 2.5
20° plantar flexion	3.9 ± 1.2	4.5 ± 1.6	4.7 ± 1.7	4.1 ± 1.2	4.8 ± 1.3	5.4 ± 1.9	5.9 ± 1.6

*Ligament sectioning order: (1) cervical (CL), (2) interosseous talocalcaneal (ITCL), (3) calcaneofibular CFL). LIER = lateral root of inferior extensor retinaculum, IIER = intermediate root of inferior extensor retinaculum, and MIER = medial root of inferior extensor retinaculum.