

TABLE E-1 Background Data on Nonoperative Treatment Group

Case	Age (yr)	Sex	Hand Dominance	Side of Injury	Mechanism of Injury	Occupation		Weeks Until Full Duty	Workers' Compensation	Duration of Follow-up (mo)
						Title	Labor-Intense*			
1	62	M	R	R	Pulling a heavy drawer	Machinist	Yes	52	Y	144
2	44	M	R	L	Stopping himself while falling	Welder	Yes	4	Y	50
3	50	F	R	L	Lifting a box of potatoes	Deli clerk/baker	Yes	7.5	Y	84
4	51	M	R	R	Falling while using crutches	Warehouse stocker	Yes	†	Y	48
5	74	M	R	R	Using a wrench	Retired	No	4	N	12
6	35	M	R	R	Working outside	Laborer at fiberglass plant	Yes	4	‡	§
7	50	M	R	L	Lifting a filing cabinet	Army recruiter	No	14	‡	144
8	63	M	R	R	Pushing off a boat	Plumbing/heating/air conditioning	Yes	2	N	24
9	42	M	R	R	Catching a falling box	Driver	No	#	‡	24
10	48	M	R	L	Lifting a window	Electrician	Yes	0	‡	82
11	48	M	L	R	Lifting a heavy pallet	Oil drilling supervisor	Yes	52	Y	146
12	48	M	R	L	Catching a falling weight	Air conditioning serviceman	Yes	10	N	28
13	58	M	R	L	Forced extension of elbow	Machinist	Yes	2	N	11
14	55	M	R	L	Lifting a heavy object	Business owner	No	10	N	13
15	46	F	R	R	Bow-hunting	School groundskeeper	Yes	6	‡	126
16	43	M	R	L	Lifting a refrigerator	Factory worker	Yes	4	Y	94
17	53	M	R	Bilateral	Did not recall	Salesman	No	8	N	12
18	61	M	R	Bilateral	Lifting a table	Salesman	No	7	N	17

*Defined as an occupation in which the patient must use the arm strength during strenuous daily tasks such as heavy lifting, controlling a heavy machine, or using a wrench or screwdriver. †This patient was already disabled from a foot injury. ‡Data not available. §This patient only had one visit, but he presented with a chronic rupture of over a year. #This patient was unemployed at the time of injury.

TABLE E-2 Strength Measurements* and Outcome Survey Results for Nonoperative Treatment Group

Case	Side of Injury †	Supination (<i>in-lb</i>)			Flexion (<i>in-lb</i>)			Outcome Measures‡		
		R	L	Percent Uninjured Extremity	R	L	Percent Uninjured Extremity	Broberg and Morrey Functional Rating Index	MEPI	DASH
1	R (D)	9	17	53%	296	455	65%	60	60	27
2	L (N)	§	§	§	§	§	§	90	95	27
3	L (N)	42	34	81%	107	72	67%	100	100	1
4	R (D)	54	112	48%	477	475	100%	84	95	0
5	R (D)	35	56	63%	361	342	106%	85	95	9
6	R (D)	64	102	63%	468	456	103%	§	§	§
7	L (N)	60	31	52%	360	354	98%	57	65	62
8	R (D)	§	§	§	§	§	§	83	80	11
9	R (D)	75	107	70%	569	691	82%	§	§	§
10	L (N)	45	24	53%	441	255	58%	78	85	8
11	R (N)	76	47	162%	422	460	92%	85	100	4
12	L (N)	§	§	§	§	§	§	75	80	12
13	L (N)	69	94	136%	673	607	90%	95	100	1
14	L (N)	77	41	53%	393	283	72%	86	85	6
15	R (D)	20	60	33%	338	306	110%	100	100	3
16	L (N)	79	56	71%	540	351	65%	93	100	0
17								63	65	42
R	B	45	#	72%	385	#	95%			
L	B	#	66	106%	#	377	93%			
18								93	100	10
R	B	49	#	79%	408	#	100%			
L	B	#	39	63%	#	378	93%			
Median				63%			93%	85	95	9

*Strength was measured in inch-pounds (*in-lb*) with use of a BTE machine (1 *in-lb* = 0.113 Nm). †D = dominant, N = nondominant, and B = bilateral. ‡MEPI = Mayo Elbow Performance Index, and DASH = Disabilities of the Arm, Shoulder and Hand questionnaire. §No data available. #For patients with bilateral injuries, strength of the injured arms was compared with the average strength of the uninjured arms for the rest of the patients in the nonoperative treatment group.

TABLE E-3 Data on Historical Control Group

Study/Case	Age (yr)	Side of Injury*	Surgery	Supination Strength†			Flexion Strength†		
				Injured Side	Contralateral Side	Percent	Injured Side	Contralateral Side	Percent
Cheung et al. ¹⁰									
1	41	N	Mayo two-incision	5	5.6	89%	27	29	93%
2	62	D	Mayo two-incision	7.3	8	91%	30	32	94%
3	49	D	Mayo two-incision	8.4	8.5	99%	32	34	94%
4	31	N	Mayo two-incision	5.7	6.5	88%	29	30	97%
5	37	D	Mayo two-incision	7.2	7	103%	38	38	100%
6	27	N	Mayo two-incision	5.1	5	102%	35	35	100%
7	52	N	Mayo two-incision	5.2	6.3	83%	26	30	87%
8	31	D	Mayo two-incision	8	8.7	92%	32	34	94%
9	30	D	Mayo two-incision	8	9.2	87%	27	30	90%
10	31	N	Mayo two-incision	8.4	8.4	100%	33	33	100%
11	28	D	Mayo two-incision	5.5	6.5	85%	26	30	87%
Baker and Bierwagen ⁸									
1	57	D	Boyd and Anderson	5.3	5.6	95%	26.3	29	91%
2	55	D	Boyd and Anderson	7.2	6.3	114%	32	32	100%
3	47	D	Boyd and Anderson	8.6	6	143%	36	36	100%
4	67	N	Boyd and Anderson	6	2.3	261%	29	24	121%
5	33	N	Boyd and Anderson	7.9	9	88%	30	28	107%
6	43	D	Boyd and Anderson	7.3	7	104%	50	39	128%
7	62	D	Boyd and Anderson	7.3	7.3	100%	42	34	124%
8	58	N	Boyd and Anderson	8	8.7	92%	35	31	113%
9	42	D	Boyd and Anderson	10	7	143%	31	26	119%
10	40	D	Boyd and Anderson	4.7	5.7	82%	30	33	91%
11	56	D	Boyd and Anderson	2.6	4	65%	18	21	86%
12	42	D	Boyd and Anderson	7.3	7.7	95%	31	36	86%
13	38	D	Boyd and Anderson	3	5	60%	14	22	64%
Klonz et al. ⁹									
1	63	D	Single anterior	9	8	63%	60	61	98%
2	49	D	Single anterior	8	9	89%	52	46	113%
3	39	D	Single anterior	8	11	73%	76	85	89%
4	39	N	Single anterior	8	7	114%	68	66	103%

5	29	N	Single anterior	7	9	78%	75	95	79%
6	48	N	Single anterior	9	7	129%	57	58	98%
7	52	D	Brachialis	4	8	50%	54	49	110%
8	52	D	Brachialis	5	12	42%	64	65	98%
9	48	D	Brachialis	7	7	100%	66	60	110%
10	35	D	Brachialis	18	12	150%	57	68	84%
11	44	N	Brachialis	5	11	45%	45	69	65%
12	53	N	Brachialis	4	5	80%	45	43	105%
13	51	N	Brachialis	8	9	89%	68	68	100%
14	50	N	Brachialis	5	9	56%	65	68	96%
Leighton et al. ⁶									
1	43	D	Boyd and Anderson	9	9	100%	49	48	102%
2	66	D	Boyd and Anderson	6	5	120%	38	33	115%
3	53	D	Boyd and Anderson	7	7	100%	22	25	88%
4	58	N	Boyd and Anderson	5	6	83%	28	32	88%
5	32	N	Boyd and Anderson	9	11	82%	50	63	79%
6	31	N	Boyd and Anderson	9	10	90%	44	42	105%
7	49	N	Boyd and Anderson	4	6	67%	28	39	72%
8	53	N	Boyd and Anderson	8	9	89%	52	62	84%
Khan et al. ¹³									
1	54	‡	Single anterior	‡	‡	‡	10.4	12.63	82%
2	52	‡	Single anterior	‡	‡	‡	27.7	32.27	86%
3	51	‡	Single anterior	‡	‡	‡	15.6	14.8	105%
4	50	‡	Single anterior	‡	‡	‡	13.8	17.7	78%
5	72	‡	Single anterior	‡	‡	‡	15.1	15.75	96%
6	42	‡	Single anterior	‡	‡	‡	17.9	19.19	93%
7	34	‡	Single anterior	‡	‡	‡	20.8	25.46	82%
8	36	‡	Single anterior	‡	‡	‡	14.4	18.81	77%
9	64	‡	Single anterior	‡	‡	‡	18.5	19.55	95%
10	45	‡	Single anterior	‡	‡	‡	12.6	14.02	90%
11	45	‡	Single anterior	‡	‡	‡	16.1	25.24	64%
12	38	‡	Single anterior	‡	‡	‡	15.1	16.45	92%
Karunakar et al. ²⁹									
1	40	D	Boyd and Anderson	10.1	6.6	153%	44.5	37.7	118%
2	37	D	Boyd and Anderson	9.8	14.3	69%	31.4	45.4	69%

3	39	D	Boyd and Anderson	5.5	3.2	172%	51.7	49.5	104%
4	45	D	Boyd and Anderson	5.7	12.3	46%	23.2	43.9	53%
5	49	D	Boyd and Anderson	4.1	5.1	80%	27.9	28.2	99%
6	49	D	Boyd and Anderson	4.6	3.1	148%	35.6	31.3	114%
7	41	D	Boyd and Anderson	5.7	7.5	76%	36.4	29.6	123%
8	55	D	Boyd and Anderson	2.4	2.8	86%	34.3	18	191%
9	51	N	Boyd and Anderson	3.3	5.3	62%	26.5	31.9	83%
10	45	N	Boyd and Anderson	5.4	3.3	164%	27.0	29.3	92%
11	70	N	Boyd and Anderson	9.2	3.1	297%	14.2	16.7	85%
12	56	D	Boyd and Anderson	4.3	4.2	102%	29.5	23.7	124%
13	41	N	Boyd and Anderson	7.5	7.3	103%	45.3	48.7	93%
14	39	D	Boyd and Anderson	8.6	8.4	102%	51.7	41.7	124%
15	53	N	Boyd and Anderson	4.6	4.4	105%	28.8	29.4	98%
16	48	D	Boyd and Anderson	5.6	4	140%	38.7	35.3	110%
17	46	N	Boyd and Anderson	5.3	9.7	55%	31.5	39.4	80%
17	45	D	Boyd and Anderson	9.7	5.3	183%	39.4	31.5	125%
Average	46					101%			97%
Average dominant						100%			103%
Average nondominant						104%			93%

*D = dominant, and N = nondominant. †The strength values in the studies by Cheung et al., Baker et al., Leighton et al., Khan et al., and Karunakar et al. were expressed in foot-pounds (1 ft-lb = 1.36 Nm). The values in the study by Klonz et al. were expressed in Nm. Strength was measured with use of a Cybex dynamometer (Cybex, Medway, Massachusetts), or Biodex System 2 dynamometer (Biodex, Shirley, New York). ‡Data not published.