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Appendix 1. Intervention

Week 0-6

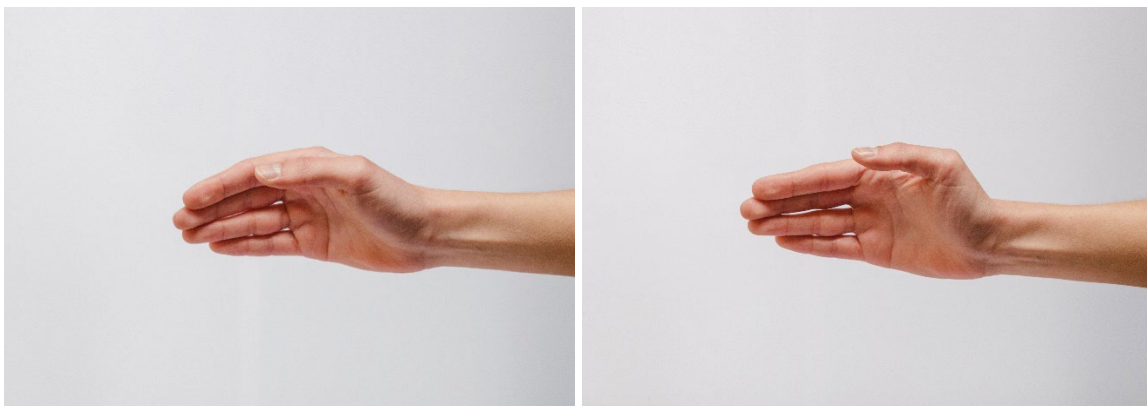
Instructions on wearing the orthosis 24 hours a day, if possible, and exercise therapy to optimize thumb positioning. This included performing coordinative and isometric exercises 4-6 times a day, 10-15 repetitions for the m. Extensor Pollicis Brevis, m. Abductor Pollicis Brevis, m. Abductor Pollicis Longus, m. Opponens Pollicis, and m. Flexor Pollicis Brevis. Starting with coordinative/selective muscle activation, and continue to build coordination with more functional exercises, such as picking up and holding various light objects while maintaining thumb position.

Examples of exercises:

1. M. Abductor Pollicis Brevis/longus and m. Opponens Pollicis – coordination exercise



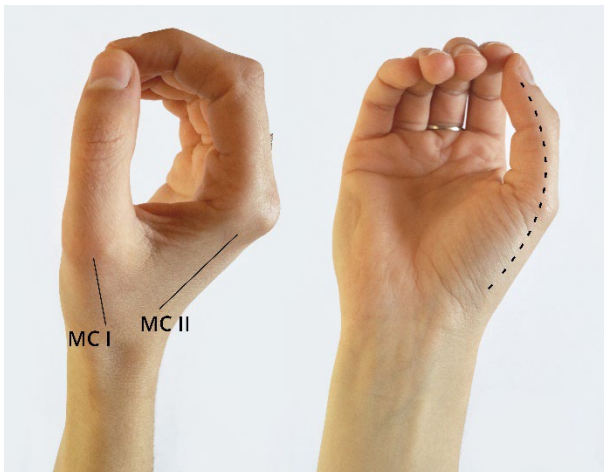
2. M. Extensor Pollicis Brevis – coordination exercise



3. M. Flexor Pollicis Brevis – coordination exercise



4. Thumb position (MC I= first metacarpal, MC II= second metacarpal)



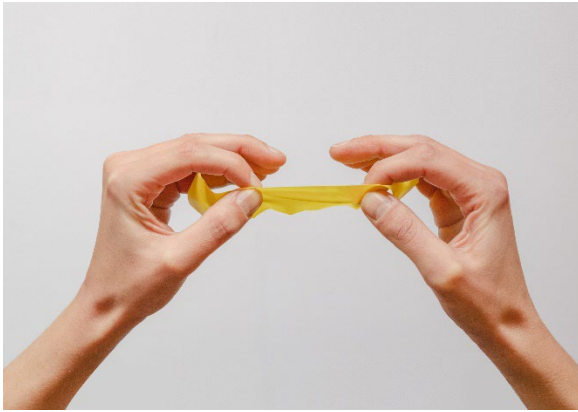
Week 6- 3 months

In the subsequent six weeks, the orthosis was phased out, and the exercises were carried out 2-3 times a day, focused on using the stable position of the thumb during daily activities and improving thenar strength. Building on using the active stability with greater force. Force was applied for 2-3 seconds and build up to multiple sessions such as 3x10-15 repetitions.

Exercises were carried out in with 2-point grip and was expanded by using the 3-point grip and lateral key pinch.

Examples of exercises:

5. Pulling a rubber band in closed and correct pinch



6. Applying manual resistance at the proximal phalanx in closed and correct pinch



7. Pulling a rubber band in open chain



8. Applying manual resistance at the proximal phalanx in open chain



9. Active dynamic stability by using a clothespin



Supplementary table 1. Non-responder analysis on demographic characteristics, baseline primary outcomes, and primary outcomes at three months to compare participants with and without the presence of the MHQ at timepoint >5 years. * indicates a significant p-value ($p < 0.05$).

Variables		Non-responder (N=248)	Responder (N=217)	p-value
Age, mean \pm SD		60 \pm 9	59 \pm 8	0.039*
Sex, n (%)	Female	189 (76)	172 (79)	0.499
Symptom duration (months), median [Q1-Q3]		12 [6-36]	12 [6-36]	0.448
Dominant hand, n (%)	Left	20 (8)	19 (9)	0.962
	Right	218 (88)	189 (87)	
	Both	10 (4)	9 (4)	
Treated hand, n (%)	Left	115 (46)	114 (53)	0.217
	Right	133 (54)	103 (48)	
Type of work, n (%)	Unemployed	113 (46)	83 (38)	0.320
	Light physical work	60 (24)	52 (24)	
	Moderate physical work	51 (21)	54 (25)	
	Heavy physical work	24 (10)	28 (13)	
Second opinion, n (%)	Yes	12 (5)	11 (5)	1.000
Michigan Hand Outcomes Questionnaire at baseline, mean \pm SD	Total score	58 \pm 14	59 \pm 14	0.444
	ADL score	64 \pm 19	66 \pm 20	0.400
	Pain score	47 \pm 18	46 \pm 16	0.635
	Function score	55 \pm 16	57 \pm 15	0.220
	Esthetics score	81 \pm 21	83 \pm 20	0.436
	Satisfaction score	41 \pm 20	42 \pm 22	0.517
	Work score	60 \pm 24	61 \pm 25	0.721
Michigan Hand Outcomes Questionnaire at 3 months, mean \pm SD	Total score	66 \pm 16	66 \pm 17	0.711
	ADL score	70 \pm 20	70 \pm 22	0.832
	Pain score	57 \pm 20	57 \pm 19	0.641
	Function score	59 \pm 16	60 \pm 15	0.592
	Esthetics score	83 \pm 22	86 \pm 17	0.058
	Satisfaction score	58 \pm 26	58 \pm 26	0.868
	Work score	67 \pm 26	65 \pm 26	0.467

Supplementary table 2. Non-responder analysis on demographic characteristics, baseline primary outcomes, and primary outcomes at 3 months to compare participants with and without the presence of the MHQ at timepoint 12 months. * indicates a significant p-value ($p < 0.05$).

Variables		Non-responder (N=36)	Responder (N=134)	p-value
Age, mean \pm SD		57 \pm 8	60 \pm 8	0.021*
Sex, n (%)	Female	29 (81)	100 (75)	0.604
Symptom duration (months), median [Q1-Q3]		12 [6-24]	12 [6-36]	0.241
Dominant hand, n (%)	Left	2 (6)	12 (9)	0.805
	Right	32 (89)	115 (86)	
	Both	2 (6)	7 (5)	
Treated hand, n (%)	Left	22 (61)	74 (55)	0.658
	Right	14 (39)	60 (45)	
Type of work, n (%)	Unemployed	9 (25)	61 (46)	0.027*
	Light physical work	12 (33)	25 (19)	
	Moderate physical work	7 (19)	34 (25)	
	Heavy physical work	8 (22)	14 (10)	
Second opinion, n (%)	Yes	3 (8)	5 (4)	0.475
Michigan Hand Outcomes Questionnaire at baseline, mean \pm SD	Total score	61 \pm 12	61 \pm 15	0.842
	ADL score	68 \pm 20	69 \pm 19	0.780
	Pain score	49 \pm 13	49 \pm 17	0.963
	Function score	58 \pm 15	58 \pm 15	0.985
	Esthetics score	87 \pm 17	83 \pm 21	0.194
	Satisfaction score	41 \pm 18	45 \pm 23	0.311
Michigan Hand Outcomes Questionnaire at 3 months, mean \pm SD	Work score	65 \pm 26	62 \pm 24	0.472
	Total score	68 \pm 12	70 \pm 16	0.547
	ADL score	72 \pm 18	75 \pm 20	0.361
	Pain score	59 \pm 18	62 \pm 18	0.444
	Function score	60 \pm 10	62 \pm 15	0.365
	Esthetics score	90 \pm 14	87 \pm 16	0.363
Michigan Hand Outcomes Questionnaire at 3 months, mean \pm SD	Satisfaction score	57 \pm 20	65 \pm 25	0.444
	Work score	72 \pm 20	69 \pm 24	0.503