

Electromyographic Analysis of Exercises on a Gymnastic Horse and a Walking Horse: A Pilot Study

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Figure S1. Technical specification of Biomonitor ME 6000 16*.

Table S1. Summary of measured values of muscle activity of all probands. MVC avg = maximum voluntary contraction, average from three measurements. Muscle activity values (averages of three measurements), and % of MVC are given for each proband. Proband sex is indicated in the parentheses following their numerical code (M = male, F = female).

			Muscle activity (μ V)								% maximum voluntary contraction							
			m. serratus anterior dexter	m. serratus anterior sinister	m. erector spinae dexter	m. erector spinae sinister	m. obliquus externus abdominis dexter	m. obliquus externus abdominis sinister	m. rectus abdominis dexter	m. rectus abdominis sinister	m. serratus anterior dexter	m. serratus anterior sinister	m. erector spinae dexter	m. erector spinae sinister	m. obliquus externus abdominis dexter	m. obliquus externus abdominis sinister	m. rectus abdominis dexter	m. rectus abdominis sinister
Proband 1 (M)	MVC avg (= 100%)		256	238	88	116	87	109	110	88								
	1. Knee elevation avg	gymnastic	47	80	57	58	76	91	61	73	18	34	64	50	88	84	55	83
	2. Rotation avg	gymnastic	131	125	54	55	94	76	48	45	51	53	61	47	108	70	44	51
	3. Clapping avg	gymnastic	58	66	53	55	116	103	71	58	23	28	61	47	133	95	65	66
	1. Knee elevation avg	horse in step	94	151	59	51	122	102	73	73	37	64	67	44	140	94	66	83
	2. Rotation avg	horse in step	86	88	60	49	65	62	52	52	34	37	69	42	74	57	48	59
	3. Clapping avg	horse in step	59	60	63	52	65	63	58	56	23	25	72	45	75	58	53	64
Pronand 2 (F)	MVC avg (= 100%)		70	72	67	71	98	81	121	151								
	1. Knee elevation avg	gymnastic	50	54	55	57	86	78	56	54	71	75	82	80	88	96	46	36
	2. Rotation avg	gymnastic	65	66	54	55	102	107	48	46	92	91	80	77	104	132	40	30
	3. Clapping avg	gymnastic	47	56	56	58	153	123	105	101	67	78	83	81	156	152	87	67
	1. Knee elevation avg	horse in step	101	91	57	51	89	61	55	54	144	127	85	72	91	76	45	36
	2. Rotation avg	horse in step	96	94	59	51	55	53	47	48	137	131	89	72	56	66	39	32
	3. Clapping avg	horse in step	72	88	61	54	69	67	50	51	102	123	91	76	70	83	42	34

Proband 3 (M)	MVC avg (= 100%)		56	81	55	56	79	65	120	116								
	1. Knee elevation avg	gymnastic	56	66	54	54	94	56	57	51	99	81	98	97	119	86	47	44
	2. Rotation avg	gymnastic	110	108	56	56	76	56	58	54	196	133	101	101	96	86	49	46
	3. Clapping avg	gymnastic	58	72	54	55	106	71	56	51	104	89	98	99	134	110	47	44
	1. Knee elevation avg	horse in step	61	66	56	62	96	66	58	56	109	82	101	111	122	102	48	48
	2. Rotation avg	horse in step	96	97	69	73	89	71	73	75	172	120	125	130	113	109	61	64
	3. Clapping avg	horse in step	67	74	75	80	107	97	68	66	120	92	137	143	135	150	57	57
Proband 4 (F)	MVC avg (= 100%)		71	73	64	68	57	57	83	76								
	1. Knee elevation avg	gymnastic	45	52	53	54	56	52	68	60	63	72	83	79	98	91	82	79
	2. Rotation avg	gymnastic	62	62	53	56	54	49	50	49	88	85	83	83	95	85	61	65
	3. Clapping avg	gymnastic	45	54	54	55	63	84	117	110	63	74	85	81	110	148	141	144
	1. Knee elevation avg	horse in step	69	72	57	46	90	91	82	68	98	99	89	68	157	160	99	89
	2. Rotation avg	horse in step	81	70	56	49	64	68	49	50	115	95	88	72	113	119	59	66
	3. Clapping avg	horse in step	84	101	61	52	95	83	101	79	118	138	95	77	166	145	121	104
Proband 5 (M)	MVC avg (= 100%)		416	131	98	103	63	124	71	68								
	1. Knee elevation avg	gymnastic	46	64	58	68	113	104	79	74	11	49	59	66	179	84	112	109
	2. Rotation avg	gymnastic	90	139	56	62	72	65	52	46	22	106	57	60	114	52	73	68
	3. Clapping avg	gymnastic	56	87	59	62	139	103	152	131	13	66	60	60	220	83	215	193
	1. Knee elevation avg	horse in step	114	103	57	48	319	207	94	98	27	79	59	46	506	167	132	144
	2. Rotation avg	horse in step	88	99	67	56	135	88	63	53	21	76	68	54	215	71	89	78
	3. Clapping avg	horse in step	71	73	66	63	98	75	85	78	17	56	68	61	156	60	120	115
Proband 6 (F)	MVC avg (= 100%)		76	69	68	69	73	65	62	69								
	1. Knee elevation avg	gymnastic	53	59	52	54	70	72	58	58	70	86	77	78	96	111	93	84
	2. Rotation avg	gymnastic	63	63	53	55	80	85	49	46	83	92	77	79	110	131	78	67
	3. Clapping avg	gymnastic	65	79	56	56	94	93	96	108	86	115	83	81	129	144	155	156
	1. Knee elevation avg	horse in step	101	115	55	53	107	97	82	79	133	167	81	77	147	149	132	115
	2. Rotation avg	horse in step	84	128	53	51	79	74	51	55	111	185	78	74	108	114	83	80
	3. Clapping avg	horse in step	65	87	61	59	82	82	68	74	86	126	89	86	113	127	110	107
Proband 7 (F)	MVC avg (= 100%)		109	73	85	84	63	57	51	46								

	1. Knee elevation avg	gymnastic	48	58	56	64	85	58	66	57	44	80	66	76	135	102	129	123
	2. Rotation avg	gymnastic	55	63	53	54	62	54	49	47	51	86	62	64	98	94	97	103
	3. Clapping avg	gymnastic	49	59	58	59	135	81	136	102	45	80	69	71	214	142	267	222
	1. Knee elevation avg	horse in step	119	105	61	58	76	99	93	81	109	144	71	69	121	174	182	175
	2. Rotation avg	horse in step	92	98	55	48	63	68	53	55	84	134	65	57	100	119	105	119
	3. Clapping avg	horse in step	104	88	70	63	120	108	162	154	96	120	82	75	191	189	318	335
Proband 8 (M)	MVC avg (= 100%)		148	178	81	76	72	70	91	77								
	1. Knee elevation avg	gymnastic	47	59	55	58	63	53	64	53	32	33	68	77	88	76	70	69
	2. Rotation avg	gymnastic	85	72	54	53	56	47	48	45	58	41	67	70	77	67	53	58
	3. Clapping avg	gymnastic	51	66	58	59	71	60	101	86	34	37	71	77	99	86	111	111
	1. Knee elevation avg	horse in step	58	71	64	72	75	69	81	70	39	40	79	94	104	99	89	91
	2. Rotation avg	horse in step	95	87	67	63	63	58	58	61	64	49	83	83	88	83	64	80
	3. Clapping avg	horse in step	63	75	69	68	85	83	104	102	43	42	85	89	118	119	114	132
Proband 9 (M)	MVC avg (= 100%)		200	213	101	123	118	101	188	185								
	1. Knee elevation avg	gymnastic	45	53	52	53	75	64	68	61	23	25	51	43	64	64	36	33
	2. Rotation avg	gymnastic	75	199	53	55	61	57	48	45	37	93	52	44	51	56	26	24
	3. Clapping avg	gymnastic	52	62	52	53	84	62	95	80	26	29	51	43	71	61	50	43
	1. Knee elevation avg	horse in step	63	58	62	63	81	71	80	69	32	27	61	51	68	71	42	37
	2. Rotation avg	horse in step	87	87	80	70	83	74	58	56	43	41	79	57	70	73	31	30
	3. Clapping avg	horse in step	57	63	81	77	82	78	97	92	29	30	80	63	69	77	52	50