

Table S1. Anthropometry, arm cranking, and overhead pulling data used in analysis.

Gender	Mass (kg)	Upper arm ffCSA (mm ²)	Arm cranking				Overhead pulling	
			Forward P _{mean} (W)	Forward P _{inst} (W)	Backward P _{mean} (W)	Backward P _{inst} (W)	Forward (N)	Backward (N)
Female	49.09	48.16	87.61	128.35	120.38	168.40	477.50	267.25
Female	52.18	49.74	96.82	146.84	129.50	191.86	542.15	336.34
Female	54.55	41.73	88.09	135.02	117.78	183.71	301.83	194.83
Female	54.82	49.94	116.39	159.80	139.67	201.49	480.79	241.61
Female	57.09	51.54	77.29	113.35	126.29	178.01	511.58	497.04
Female	57.60	56.94	161.57	242.69	188.81	306.53	736.81	202.11
Female	58.00	52.15	55.67	84.26	95.45	150.18	374.53	137.23
Female	59.64	48.94	123.23	206.74	135.34	228.43	614.33	275.62
Female	61.00	62.61	143.86	244.62	172.04	284.63	498.26	270.88
Female	61.27	52.76	83.77	127.71	132.96	186.10	472.46	270.81
Female	61.27	60.84	105.32	157.18	131.79	225.28	471.70	265.93
Female	61.73	52.15	91.59	147.52	119.88	200.02	462.71	192.98
Female	62.73	61.94	112.71	167.29	145.37	215.99	402.76	201.68
Female	65.27	58.01	133.87	207.08	170.11	243.66	611.45	256.10
Female	65.91	69.25	110.02	183.59	208.88	291.97	459.85	212.39
Female	65.91	62.17	92.24	154.02	125.24	191.03	464.52	206.10
Female	66.27	65.78	144.25	252.30	154.47	238.08	695.66	595.76
Female	67.64	60.18	121.54	197.47	161.00	234.38	404.09	147.21
Female	68.36	61.72	98.14	148.10	160.08	232.45	615.18	453.24
Male	71.36	66.46	248.99	355.14	255.13	383.76	1125.77	593.98
Male	71.82	72.58	309.70	477.41	320.04	474.48	1222.76	475.36
Male	74.82	63.06	189.81	288.12	211.32	354.60	1130.43	307.49
Male	76.27	73.78	244.92	330.76	327.65	512.69	1088.58	338.42
Male	77.00	60.62	275.82	420.01	275.59	517.07	806.99	471.84
Male	80.18	74.27	333.53	520.50	371.35	651.32	1468.34	463.91
Male	81.00	82.77	272.10	446.51	328.12	501.92	1120.04	392.71
Male	82.18	94.17	256.27	433.61	262.13	467.09	1130.22	444.31
Male	82.55	81.49	206.82	294.19	208.93	286.62	818.47	317.52
Male	84.00	87.98	301.07	457.28	307.32	588.90	889.74	287.74
Male	84.18	70.91	272.64	425.54	309.52	522.58	1206.22	447.93
Male	84.91	83.02	251.60	418.27	283.00	423.33	974.98	572.46
Male	85.18	81.49	225.21	351.40	207.73	311.03	971.42	469.06
Male	85.55	85.61	261.21	418.31	230.61	369.77	1135.10	383.79
Male	91.73	80.98	303.46	428.61	288.07	483.35	776.40	603.82
Male	92.91	109.83	228.54	335.13	342.76	481.63	880.14	652.69
Male	96.55	90.38	249.63	417.27	278.65	456.16	847.70	532.14
Male	101.64	114.31	451.68	628.16	364.55	586.19	1613.01	703.40
Male	109.09	114.61	420.89	629.91	388.70	654.27	1916.30	799.55
Male	116.45	136.72	328.45	552.51	346.84	577.17	1153.86	486.99