

Supplementary Material

Table 1. Jumping sideways. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95) and LMS values for boys from 3 to 23 years of age.

Dec. Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.761438	4.559572	0.388846	2	2	3	4	4	5	5	6	6	7	8
3.5	0.761438	5.603585	0.383349	2	3	4	5	5	6	6	7	7	9	9
4.0	0.761438	7.778374	0.371898	3	4	5	6	7	8	9	9	10	12	13
4.5	0.761438	9.951498	0.360453	5	6	7	8	9	10	11	12	13	15	16
5.0	0.761438	12.11747	0.349027	6	7	9	10	11	12	13	14	16	18	20
5.5	0.761438	14.26656	0.337634	7	8	10	12	13	14	15	17	18	21	23
6.0	0.761438	16.38579	0.326293	8	10	12	14	15	16	18	19	21	24	26
6.5	0.761438	18.46067	0.315029	10	11	14	15	17	18	20	22	24	26	29
7.0	0.761438	20.47739	0.303882	11	13	15	17	19	20	22	24	26	29	31
7.5	0.761438	22.42349	0.292898	12	14	17	19	21	22	24	26	28	31	34
8.0	0.761438	24.28818	0.282118	14	16	19	21	23	24	26	28	30	33	36
8.5	0.761438	26.06396	0.271592	15	17	20	22	24	26	28	30	32	35	38
9.0	0.761438	27.74749	0.261375	16	19	22	24	26	28	30	32	34	37	40
9.5	0.761438	29.33801	0.251513	18	20	23	26	27	29	31	33	36	39	42
10.0	0.761438	30.83623	0.242035	19	22	25	27	29	31	33	35	37	41	44
10.5	0.761438	32.2458	0.232964	20	23	26	28	30	32	34	36	39	42	45
11.0	0.761438	33.57211	0.224325	22	24	27	30	32	34	35	38	40	44	46
11.5	0.761438	34.82044	0.216137	23	26	29	31	33	35	37	39	41	45	48
12.0	0.761438	35.99492	0.208423	24	27	30	32	34	36	38	40	42	46	49
12.5	0.761438	37.09941	0.201188	25	28	31	33	35	37	39	41	44	47	50
13.0	0.761438	38.13719	0.194411	26	29	32	34	36	38	40	42	44	48	51

13.5	0.761438	39.10963	0.188042	27	30	33	35	37	39	41	43	45	49	52
14.0	0.761438	40.01703	0.182020	28	31	34	36	38	40	42	44	46	50	52
14.5	0.761438	40.86015	0.176297	29	32	35	37	39	41	43	45	47	50	53
15.0	0.761438	41.64014	0.170851	30	33	36	38	40	42	43	45	48	51	54
15.5	0.761438	42.35799	0.165684	31	34	37	39	41	42	44	46	48	52	54
16.0	0.761438	43.01494	0.160794	32	34	37	39	41	43	45	47	49	52	55
16.5	0.761438	43.6128	0.156171	33	35	38	40	42	44	45	47	49	53	55
17.0	0.761438	44.15441	0.151800	33	36	39	41	42	44	46	48	50	53	55
17.5	0.761438	44.64323	0.147657	34	36	39	41	43	45	46	48	50	53	56
18.0	0.761438	45.08276	0.143724	35	37	40	42	43	45	47	49	51	54	56
18.5	0.761438	45.47717	0.139983	35	37	40	42	44	45	47	49	51	54	56
19.0	0.761438	45.83224	0.136433	36	38	41	43	44	46	47	49	51	54	56
19.5	0.761438	46.15465	0.133072	36	38	41	43	45	46	48	49	51	54	57
20.0	0.761438	46.4513	0.129901	37	39	41	43	45	46	48	50	52	54	57
20.5	0.761438	46.72868	0.126914	37	39	42	44	45	47	48	50	52	54	57
21.0	0.761438	46.99263	0.124074	38	40	42	44	46	47	48	50	52	55	57
21.5	0.761438	47.24738	0.121338	38	40	42	44	46	47	49	50	52	55	57
22.0	0.761438	47.49594	0.118655	38	40	43	45	46	47	49	50	52	55	57
22.5	0.761438	47.74136	0.115992	39	41	43	45	46	48	49	51	52	55	57
23.0	0.761438	47.9761	0.113438	39	41	43	45	47	48	49	51	53	55	57

Note: values are number of sideways jumps in 15 seconds

Table 2. Jumping sideways. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Dec. Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.798306	3.449429	0.413437	1	2	2	3	3	3	4	4	5	5	6
3.5	0.798306	4.198397	0.408914	2	2	3	3	4	4	5	5	6	7	7
4.0	0.798306	6.541225	0.394779	3	3	4	5	6	7	7	8	9	10	11
4.5	0.798306	8.896541	0.380659	4	5	6	7	8	9	10	11	12	13	15
5.0	0.798306	11.27861	0.366593	5	6	8	9	10	11	12	13	15	17	18
5.5	0.798306	13.69465	0.352633	6	8	10	11	12	14	15	16	18	20	22
6.0	0.798306	16.13184	0.338835	8	9	12	13	15	16	18	19	21	23	26
6.5	0.798306	18.55169	0.325254	9	11	14	15	17	19	20	22	24	27	29
7.0	0.798306	20.89865	0.311944	11	13	16	18	19	21	23	24	27	30	32
7.5	0.798306	23.11301	0.298950	12	15	17	20	21	23	25	27	29	32	35
8.0	0.798306	25.14776	0.286328	14	16	19	21	23	25	27	29	31	35	38
8.5	0.798306	26.99021	0.274152	15	18	21	23	25	27	29	31	33	37	40
9.0	0.798306	28.64414	0.262502	17	19	22	25	27	29	31	33	35	39	42
9.5	0.798306	30.10152	0.251457	18	21	24	26	28	30	32	34	37	40	43
10.0	0.798306	31.34265	0.241094	19	22	25	27	29	31	33	35	38	41	44
10.5	0.798306	32.37561	0.231491	21	23	26	28	30	32	34	36	39	42	45
11.0	0.798306	33.24308	0.222723	22	24	27	29	31	33	35	37	40	43	46
11.5	0.798306	33.98693	0.214841	22	25	28	30	32	34	36	38	40	44	46
12.0	0.798306	34.64398	0.207874	23	26	29	31	33	35	36	38	41	44	47
12.5	0.798306	35.25261	0.201799	24	26	29	32	33	35	37	39	41	45	47
13.0	0.798306	35.84537	0.196534	25	27	30	32	34	36	38	40	42	45	48
13.5	0.798306	36.43477	0.191974	25	28	31	33	35	36	38	40	42	46	48
14.0	0.798306	37.01458	0.188015	26	28	31	33	35	37	39	41	43	46	49
14.5	0.798306	37.58005	0.184550	27	29	32	34	36	38	39	41	44	47	49

15.0	0.798306	38.13478	0.181524	27	29	32	35	36	38	40	42	44	47	50
15.5	0.798306	38.68076	0.178872	28	30	33	35	37	39	40	42	45	48	50
16.0	0.798306	39.21475	0.176505	28	31	33	36	37	39	41	43	45	48	51
16.5	0.798306	39.73017	0.174305	29	31	34	36	38	40	41	43	46	49	51
17.0	0.798306	40.22456	0.172167	29	32	34	37	38	40	42	44	46	49	52
17.5	0.798306	40.69525	0.169999	30	32	35	37	39	41	42	44	47	50	52
18.0	0.798306	41.13708	0.167707	30	32	35	38	39	41	43	45	47	50	53
18.5	0.798306	41.53714	0.165219	31	33	36	38	40	42	43	45	47	51	53
19.0	0.798306	41.88094	0.162517	31	33	36	38	40	42	44	45	48	51	53
19.5	0.798306	42.16278	0.159612	31	34	37	39	40	42	44	46	48	51	54
20.0	0.798306	42.38482	0.156530	32	34	37	39	41	42	44	46	48	51	54
20.5	0.798306	42.56158	0.153334	32	34	37	39	41	43	44	46	48	51	54
21.0	0.798306	42.70443	0.150065	32	35	37	39	41	43	44	46	48	51	53
21.5	0.798306	42.82055	0.146740	33	35	38	40	41	43	44	46	48	51	53
22.0	0.798306	42.92085	0.143382	33	35	38	40	41	43	44	46	48	51	53
22.5	0.798306	43.01421	0.140008	33	35	38	40	41	43	45	46	48	51	53
23.0	0.798306	43.06555	0.138117	34	36	38	40	42	43	45	46	48	51	53

Note: values are number of sideway jumps in 15 seconds

Table 3. Shifting platforms. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for boys from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.198727	4.771041	0.285320	3	3	4	4	4	5	5	6	6	7	7
3.5	0.226141	5.590203	0.280499	3	4	4	5	5	6	6	6	7	8	9
4.0	0.282703	7.295217	0.270448	5	5	6	6	7	7	8	8	9	10	11
4.5	0.333834	9.001826	0.260405	6	6	7	8	8	9	10	10	11	12	13
5.0	0.377262	10.6879	0.250461	7	8	9	9	10	11	11	12	13	14	16
5.5	0.415355	12.30994	0.240724	8	9	10	11	12	12	13	14	15	16	18
6.0	0.449455	13.82512	0.231324	9	10	11	12	13	14	15	16	17	18	20
6.5	0.480354	15.20293	0.222393	10	11	12	13	14	15	16	17	18	20	21
7.0	0.511531	16.42691	0.214063	11	12	14	15	16	16	17	18	20	21	23
7.5	0.546845	17.5019	0.206461	12	13	15	16	17	18	18	19	21	22	24
8.0	0.587571	18.44977	0.199627	13	14	15	17	18	18	19	20	22	23	25
8.5	0.630721	19.2975	0.193562	14	15	16	17	18	19	20	21	23	24	26
9.0	0.672238	20.06361	0.188178	14	15	17	18	19	20	21	22	23	25	27
9.5	0.709298	20.76574	0.183326	15	16	18	19	20	21	22	23	24	26	27
10.0	0.740772	21.41881	0.178866	15	17	18	19	20	21	22	23	25	26	28
10.5	0.767105	22.03661	0.174689	16	17	19	20	21	22	23	24	25	27	29
11.0	0.789467	22.63169	0.170741	16	18	19	21	22	23	24	25	26	28	29
11.5	0.808469	23.21478	0.167002	17	18	20	21	22	23	24	25	27	28	30
12.0	0.824899	23.79165	0.163479	18	19	21	22	23	24	25	26	27	29	30
12.5	0.839465	24.36414	0.160174	18	19	21	22	23	24	25	26	28	29	31
13.0	0.852683	24.93077	0.157078	19	20	22	23	24	25	26	27	28	30	31
13.5	0.864915	25.48735	0.154191	19	21	22	23	24	25	26	28	29	31	32
14.0	0.876333	26.02793	0.151520	20	21	23	24	25	26	27	28	29	31	33
14.5	0.886985	26.54738	0.149063	20	22	23	24	26	27	28	29	30	32	33

15.0	0.896940	27.04047	0.146815	21	22	24	25	26	27	28	29	30	32	34
15.5	0.906268	27.50262	0.144776	21	22	24	25	26	28	29	30	31	33	34
16.0	0.914981	27.92996	0.142945	21	23	25	26	27	28	29	30	31	33	35
16.5	0.923085	28.31966	0.141313	22	23	25	26	27	28	29	30	32	33	35
17.0	0.930594	28.67165	0.139867	22	24	25	27	28	29	30	31	32	34	35
17.5	0.937533	28.98839	0.138588	22	24	26	27	28	29	30	31	32	34	36
18.0	0.943924	29.27246	0.137455	23	24	26	27	28	29	30	31	33	34	36
18.5	0.949780	29.52602	0.136454	23	24	26	27	29	30	31	32	33	35	36
19.0	0.955130	29.75215	0.135567	23	25	26	28	29	30	31	32	33	35	36
19.5	0.960019	29.95445	0.134777	23	25	27	28	29	30	31	32	33	35	37
20.0	0.964511	30.13718	0.134065	24	25	27	28	29	30	31	32	34	35	37
20.5	0.968713	30.306	0.133410	24	25	27	28	29	30	31	32	34	36	37
21.0	0.972714	30.46559	0.132791	24	25	27	28	29	30	31	33	34	36	37
21.5	0.976552	30.618	0.132202	24	25	27	28	30	31	32	33	34	36	37
22.0	0.980267	30.76503	0.131633	24	26	27	29	30	31	32	33	34	36	37
22.5	0.983912	30.90901	0.131077	24	26	28	29	30	31	32	33	34	36	38
23.0	0.987386	31.04616	0.130547	24	26	28	29	30	31	32	33	34	36	38

Note: values are number of points in 20 seconds

Table 4. Shifting platforms. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.551081	5.738969	0.284353	3	4	4	5	5	6	6	7	7	8	9
3.5	0.551081	6.173721	0.281935	4	4	5	5	6	6	7	7	8	9	9
4.0	0.551081	7.531066	0.274378	4	5	6	6	7	8	8	9	9	10	11
4.5	0.551081	8.881374	0.266817	5	6	7	8	8	9	9	10	11	12	13
5.0	0.551081	10.2163	0.259273	6	7	8	9	10	10	11	12	13	14	15
5.5	0.551081	11.52502	0.251788	7	8	9	10	11	12	12	13	14	16	17
6.0	0.551081	12.7957	0.244402	8	9	10	11	12	13	14	14	16	17	18
6.5	0.551081	14.01749	0.237163	9	10	11	12	13	14	15	16	17	19	20
7.0	0.551081	15.17935	0.230114	10	11	12	13	14	15	16	17	18	20	21
7.5	0.551081	16.27139	0.223298	11	12	13	14	15	16	17	18	19	21	23
8.0	0.551081	17.28677	0.216753	12	13	14	15	16	17	18	19	21	22	24
8.5	0.551081	18.22225	0.210507	12	14	15	16	17	18	19	20	22	23	25
9.0	0.551081	19.07717	0.204558	13	14	16	17	18	19	20	21	22	24	26
9.5	0.551081	19.85117	0.198868	14	15	17	18	19	20	21	22	23	25	27
10.0	0.551081	20.54477	0.193392	14	16	17	19	20	21	22	23	24	26	28
10.5	0.551081	21.16451	0.188097	15	16	18	19	20	21	22	23	25	27	28
11.0	0.551081	21.72157	0.182983	16	17	18	20	21	22	23	24	25	27	29
11.5	0.551081	22.22703	0.178089	16	17	19	20	21	22	23	24	26	28	29
12.0	0.551081	22.69164	0.173449	17	18	19	21	22	23	24	25	26	28	30
12.5	0.551081	23.12501	0.169077	17	18	20	21	22	23	24	25	27	28	30
13.0	0.551081	23.5351	0.164960	18	19	20	22	23	24	25	26	27	29	30
13.5	0.551081	23.92653	0.161078	18	19	21	22	23	24	25	26	27	29	31
14.0	0.551081	24.30119	0.157405	18	20	21	22	23	24	25	26	28	29	31
14.5	0.551081	24.6603	0.153911	19	20	22	23	24	25	26	27	28	30	31

15.0	0.551081	25.00546	0.150587	19	20	22	23	24	25	26	27	28	30	32
15.5	0.551081	25.33932	0.147426	20	21	22	23	24	25	26	27	29	30	32
16.0	0.551081	25.66488	0.144419	20	21	23	24	25	26	27	28	29	31	32
16.5	0.551081	25.98404	0.141548	20	21	23	24	25	26	27	28	29	31	32
17.0	0.551081	26.29793	0.138797	21	22	23	24	25	26	27	28	29	31	33
17.5	0.551081	26.60739	0.136150	21	22	24	25	26	27	28	29	30	31	33
18.0	0.551081	26.9126	0.133588	21	22	24	25	26	27	28	29	30	32	33
18.5	0.551081	27.21228	0.131093	22	23	24	25	26	27	28	29	30	32	33
19.0	0.551081	27.50548	0.128642	22	23	25	26	27	28	28	29	31	32	34
19.5	0.551081	27.79292	0.126208	22	23	25	26	27	28	29	30	31	32	34
20.0	0.551081	28.07544	0.123763	23	24	25	26	27	28	29	30	31	33	34
20.5	0.551081	28.35423	0.121294	23	24	26	27	27	28	29	30	31	33	34
21.0	0.551081	28.63134	0.118800	23	24	26	27	28	29	29	30	32	33	34
21.5	0.551081	28.9077	0.116281	24	25	26	27	28	29	30	31	32	33	35
22.0	0.551081	29.1839	0.113745	24	25	26	27	28	29	30	31	32	34	35
22.5	0.551081	29.46017	0.111201	24	25	27	28	29	29	30	31	32	34	35
23.0	0.551081	29.61486	0.109774	24	26	27	28	29	30	30	31	32	34	35

Note: values are number of points in 20 seconds

Table 5. Standing long jump. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for boys from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	1.50760	52.43554	0.25695	26.8	33.3	40.4	45.1	49.0	52.4	55.8	59.3	63.2	68.5	72.7
3.5	1.50760	56.37761	0.25202	29.4	36.2	43.7	48.7	52.7	56.4	59.9	63.6	67.8	73.4	77.8
4.0	1.50760	64.58247	0.24181	35.2	42.5	50.6	56.1	60.6	64.6	68.5	72.5	77.1	83.3	88.2
4.5	1.50760	72.75073	0.23182	41.2	49.1	57.7	63.6	68.4	72.8	77.0	81.3	86.3	93.0	98.3
5.0	1.50760	80.80747	0.22223	47.5	55.7	64.9	71.1	76.2	80.8	85.3	90.0	95.3	102.4	108.1
5.5	1.50760	88.64368	0.21321	53.8	62.3	71.9	78.4	83.8	88.6	93.4	98.3	103.9	111.4	117.5
6.0	1.50760	96.12723	0.20484	60.1	68.8	78.7	85.5	91.1	96.1	101.1	106.2	112.0	119.9	126.2
6.5	1.50760	103.14150	0.19716	66.1	75.0	85.2	92.2	97.9	103.1	108.2	113.5	119.6	127.8	134.3
7.0	1.50760	109.58780	0.19017	71.8	80.9	91.2	98.4	104.2	109.6	114.8	120.3	126.5	134.9	141.6
7.5	1.50760	115.41340	0.18389	77.1	86.2	96.8	104.0	110.0	115.4	120.7	126.3	132.6	141.2	148.1
8.0	1.50760	120.63800	0.17840	81.9	91.1	101.8	109.1	115.1	120.6	126.0	131.7	138.1	146.8	153.8
8.5	1.50760	125.28030	0.17362	86.2	95.5	106.2	113.6	119.7	125.3	130.7	136.4	143.0	151.8	158.9
9.0	1.50760	129.41910	0.16950	90.1	99.5	110.2	117.6	123.8	129.4	134.9	140.7	147.3	156.2	163.3
9.5	1.50760	133.19640	0.16602	93.7	103.0	113.9	121.3	127.5	133.2	138.7	144.6	151.2	160.2	167.4
10.0	1.50760	136.82030	0.16330	97.0	106.4	117.3	124.8	131.1	136.8	142.4	148.3	155.0	164.1	171.4
10.5	1.50760	140.48930	0.16129	100.1	109.7	120.7	128.3	134.7	140.5	146.2	152.1	159.0	168.2	175.6
11.0	1.50760	144.33980	0.15974	103.3	113.0	124.2	132.0	138.4	144.3	150.1	156.2	163.1	172.5	180.1
11.5	1.50760	148.47930	0.15840	106.6	116.5	127.9	135.9	142.5	148.5	154.4	160.6	167.7	177.3	185.0
12.0	1.50760	152.96450	0.15716	110.2	120.3	132.0	140.1	146.8	153.0	159.0	165.3	172.6	182.4	190.3
12.5	1.50760	157.78420	0.15589	114.1	124.4	136.3	144.6	151.5	157.8	164.0	170.4	177.9	187.9	196.0
13.0	1.50760	162.87760	0.15438	118.3	128.8	140.9	149.4	156.4	162.9	169.2	175.8	183.4	193.7	201.9
13.5	1.50760	168.15010	0.15241	122.7	133.4	145.8	154.4	161.6	168.2	174.6	181.3	189.1	199.6	208.0
14.0	1.50760	173.49050	0.14977	127.5	138.3	150.9	159.6	166.8	173.5	180.0	186.9	194.7	205.4	213.9

14.5	1.50760	178.79880	0.14630	132.6	143.4	156.0	164.8	172.1	178.8	185.4	192.3	200.2	210.9	219.6
15.0	1.50760	184.01200	0.14199	138.0	148.7	161.3	170.0	177.3	184.0	190.6	197.5	205.4	216.1	224.8
15.5	1.50760	189.06420	0.13692	143.6	154.2	166.6	175.2	182.4	189.1	195.6	202.4	210.3	220.9	229.5
16.0	1.50760	193.87490	0.13118	149.3	159.7	171.8	180.3	187.4	193.9	200.3	207.0	214.7	225.2	233.7
16.5	1.50760	198.38950	0.12492	155.1	165.2	176.9	185.2	192.1	198.4	204.6	211.2	218.7	229.0	237.3
17.0	1.50760	202.59790	0.11836	160.9	170.5	181.9	189.8	196.5	202.6	208.6	215.0	222.3	232.3	240.3
17.5	1.50760	206.51780	0.11181	166.5	175.7	186.6	194.2	200.6	206.5	212.3	218.5	225.5	235.1	242.9
18.0	1.50760	210.16360	0.10554	171.8	180.6	191.0	198.4	204.5	210.2	215.7	221.6	228.4	237.7	245.2
18.5	1.50760	213.53200	0.09979	176.8	185.2	195.2	202.2	208.1	213.5	218.9	224.6	231.1	240.0	247.3
19.0	1.50760	216.61400	0.09471	181.4	189.4	199.0	205.7	211.4	216.6	221.8	227.2	233.5	242.2	249.2
19.5	1.50760	219.38690	0.09044	185.4	193.1	202.3	208.9	214.3	219.4	224.4	229.7	235.8	244.1	250.9
20.0	1.50760	221.81200	0.08700	188.8	196.3	205.3	211.6	216.9	221.8	226.7	231.8	237.8	245.9	252.5
20.5	1.50760	223.88130	0.08419	191.7	199.0	207.7	213.9	219.1	223.9	228.6	233.7	239.5	247.4	253.9
21.0	1.50760	225.64420	0.08170	194.2	201.3	209.8	215.9	220.9	225.6	230.3	235.2	240.9	248.7	255.0
21.5	1.50760	227.18940	0.07927	196.5	203.5	211.8	217.6	222.6	227.2	231.7	236.5	242.1	249.7	255.9
22.0	1.50760	228.59180	0.07691	198.7	205.4	213.5	219.3	224.1	228.6	233.0	237.7	243.2	250.6	256.7
22.5	1.50760	229.92060	0.07460	200.7	207.4	215.2	220.8	225.6	229.9	234.2	238.8	244.1	251.4	257.3
23.0	1.50760	231.17910	0.07239	202.7	209.2	216.9	222.3	226.9	231.2	235.4	239.9	245.1	252.2	257.9

Note: values are in centimeters

Table 6. Standing long jump. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.70002	42.20765	0.30771	22.6	26.6	31.7	35.6	39.0	42.2	45.5	49.2	53.5	59.8	65.1
3.5	0.70002	45.01015	0.30237	24.4	28.6	34.0	38.0	41.6	45.0	48.5	52.3	56.9	63.4	69.0
4.0	0.70002	53.74895	0.28575	30.4	35.2	41.3	45.9	49.9	53.7	57.7	62.0	67.1	74.5	80.7
4.5	0.70002	62.37034	0.26939	36.7	42.0	48.7	53.7	58.2	62.4	66.7	71.4	77.0	85.0	91.7
5.0	0.70002	70.74506	0.25356	43.2	48.9	56.1	61.5	66.2	70.7	75.3	80.3	86.3	94.8	102.0
5.5	0.70002	78.77492	0.23851	49.8	55.8	63.5	69.1	74.1	78.8	83.6	88.8	95.1	103.9	111.4
6.0	0.70002	86.39742	0.22455	56.3	62.6	70.5	76.4	81.5	86.4	91.4	96.7	103.2	112.3	120.0
6.5	0.70002	93.55923	0.21192	62.7	69.2	77.3	83.3	88.6	93.6	98.6	104.1	110.7	120.0	127.8
7.0	0.70002	100.19020	0.20082	68.8	75.4	83.7	89.8	95.1	100.2	105.3	110.9	117.5	126.9	134.9
7.5	0.70002	106.20300	0.19139	74.4	81.1	89.5	95.7	101.1	106.2	111.4	117.0	123.7	133.2	141.2
8.0	0.70002	111.52810	0.18363	79.4	86.2	94.7	100.9	106.4	111.5	116.8	122.4	129.2	138.7	146.7
8.5	0.70002	116.14750	0.17739	83.8	90.7	99.2	105.5	111.0	116.1	121.4	127.1	133.9	143.4	151.5
9.0	0.70002	120.07940	0.17236	87.5	94.5	103.0	109.4	114.9	120.1	125.4	131.1	137.9	147.5	155.5
9.5	0.70002	123.37960	0.16839	90.7	97.6	106.3	112.6	118.2	123.4	128.7	134.4	141.2	150.9	158.9
10.0	0.70002	126.11420	0.16543	93.2	100.2	108.9	115.3	120.9	126.1	131.4	137.2	144.0	153.7	161.8
10.5	0.70002	128.35840	0.16365	95.3	102.3	111.1	117.5	123.1	128.4	133.7	139.5	146.4	156.1	164.3
11.0	0.70002	130.23700	0.16310	96.8	103.9	112.7	119.2	124.9	130.2	135.7	141.5	148.5	158.3	166.5
11.5	0.70002	131.85540	0.16348	97.9	105.1	114.1	120.7	126.4	131.9	137.3	143.3	150.4	160.3	168.7
12.0	0.70002	133.29190	0.16420	98.8	106.1	115.3	122.0	127.8	133.3	138.9	144.9	152.1	162.2	170.7
12.5	0.70002	134.62550	0.16490	99.7	107.1	116.3	123.1	129.0	134.6	140.3	146.4	153.7	164.0	172.6
13.0	0.70002	135.93530	0.16541	100.5	108.1	117.4	124.3	130.3	135.9	141.7	147.9	155.2	165.7	174.4
13.5	0.70002	137.29260	0.16566	101.5	109.1	118.6	125.5	131.6	137.3	143.1	149.4	156.8	167.4	176.2
14.0	0.70002	138.75900	0.16555	102.6	110.3	119.8	126.9	133.0	138.8	144.6	151.0	158.5	169.1	178.0
14.5	0.70002	140.36900	0.16503	103.9	111.6	121.3	128.4	134.5	140.4	146.3	152.7	160.3	171.0	180.0

15.0	0.70002	142.12800	0.16429	105.3	113.2	122.9	130.0	136.3	142.1	148.1	154.5	162.2	173.0	182.0
15.5	0.70002	144.02850	0.16367	106.9	114.8	124.6	131.8	138.1	144.0	150.0	156.5	164.3	175.2	184.3
16.0	0.70002	146.04690	0.16347	108.4	116.4	126.4	133.7	140.0	146.0	152.1	158.7	166.5	177.6	186.9
16.5	0.70002	148.14850	0.16375	109.9	118.1	128.2	135.6	142.0	148.1	154.3	161.0	169.0	180.2	189.6
17.0	0.70002	150.29510	0.16454	111.3	119.6	129.9	137.5	144.1	150.3	156.6	163.4	171.5	183.0	192.6
17.5	0.70002	152.44520	0.16573	112.7	121.1	131.6	139.4	146.1	152.4	158.9	165.9	174.1	185.8	195.6
18.0	0.70002	154.55200	0.16715	113.9	122.5	133.3	141.2	148.1	154.6	161.1	168.3	176.7	188.7	198.7
18.5	0.70002	156.54920	0.16857	115.0	123.8	134.8	142.9	149.9	156.5	163.3	170.6	179.2	191.4	201.7
19.0	0.70002	158.38510	0.16984	116.1	125.1	136.2	144.5	151.6	158.4	165.2	172.7	181.5	194.0	204.4
19.5	0.70002	160.05170	0.17096	117.0	126.2	137.5	145.9	153.2	160.1	167.0	174.6	183.6	196.3	206.9
20.0	0.70002	161.54640	0.17199	117.9	127.1	138.7	147.2	154.6	161.5	168.6	176.3	185.4	198.3	209.1
20.5	0.70002	162.89210	0.17300	118.6	128.0	139.7	148.3	155.8	162.9	170.1	177.9	187.1	200.2	211.2
21.0	0.70002	164.14730	0.17392	119.3	128.8	140.7	149.4	157.0	164.1	171.4	179.3	188.7	201.9	213.1
21.5	0.70002	165.36880	0.17470	120.0	129.6	141.6	150.4	158.1	165.4	172.7	180.7	190.2	203.6	214.9
22.0	0.70002	166.57620	0.17542	120.7	130.4	142.5	151.5	159.2	166.6	174.0	182.1	191.7	205.3	216.7
22.5	0.70002	167.78240	0.17612	121.4	131.2	143.5	152.5	160.3	167.8	175.3	183.5	193.2	206.9	218.4
23.0	0.70002	168.45800	0.17651	121.8	131.7	144.0	153.1	161.0	168.5	176.0	184.3	194.0	207.8	219.4

Note: values are in centimeters

Table 7. Shuttle run. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for boys from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	-1.928414	17.58953	0.127233	23.00	21.39	19.83	18.89	18.18	17.59	17.05	16.52	15.96	15.26	14.75
3.5	-1.891702	17.39841	0.12553	22.61	21.08	19.57	18.67	17.98	17.40	16.87	16.35	15.80	15.12	14.62
4.0	-1.816402	17.00043	0.121985	21.82	20.43	19.05	18.20	17.55	17.00	16.50	16.00	15.47	14.81	14.33
4.5	-1.745557	16.60356	0.118459	21.07	19.81	18.53	17.73	17.12	16.60	16.12	15.65	15.15	14.51	14.04
5.0	-1.682433	16.20963	0.114968	20.35	19.20	18.02	17.27	16.70	16.21	15.76	15.31	14.82	14.21	13.76
5.5	-1.629886	15.8213	0.111530	19.67	18.62	17.52	16.82	16.29	15.82	15.39	14.96	14.50	13.91	13.48
6.0	-1.58975	15.44147	0.108163	19.03	18.06	17.04	16.39	15.88	15.44	15.03	14.63	14.18	13.62	13.20
6.5	-1.562112	15.07271	0.104886	18.43	17.53	16.57	15.96	15.49	15.07	14.69	14.30	13.88	13.34	12.94
7.0	-1.545795	14.71722	0.101719	17.86	17.02	16.13	15.56	15.11	14.72	14.35	13.98	13.58	13.07	12.68
7.5	-1.539687	14.37662	0.098684	17.33	16.55	15.71	15.17	14.75	14.38	14.03	13.68	13.30	12.81	12.44
8.0	-1.543138	14.05172	0.095800	16.83	16.10	15.32	14.81	14.40	14.05	13.72	13.39	13.02	12.56	12.20
8.5	-1.555644	13.74263	0.093076	16.37	15.68	14.94	14.46	14.08	13.74	13.43	13.11	12.76	12.32	11.98
9.0	-1.576854	13.44929	0.090506	15.94	15.29	14.59	14.13	13.77	13.45	13.15	12.85	12.52	12.09	11.77
9.5	-1.606231	13.17131	0.088081	15.53	14.92	14.25	13.82	13.47	13.17	12.89	12.60	12.28	11.87	11.56
10.0	-1.642937	12.90687	0.085790	15.15	14.57	13.94	13.52	13.20	12.91	12.63	12.36	12.06	11.67	11.37
10.5	-1.685559	12.65274	0.083620	14.80	14.24	13.64	13.24	12.93	12.65	12.39	12.13	11.84	11.47	11.18
11.0	-1.732477	12.40618	0.081568	14.45	13.92	13.35	12.97	12.67	12.41	12.16	11.90	11.63	11.27	11.00
11.5	-1.782381	12.1656	0.079635	14.12	13.62	13.07	12.71	12.42	12.17	11.93	11.69	11.42	11.08	10.81
12.0	-1.834995	11.93069	0.077825	13.81	13.32	12.79	12.45	12.17	11.93	11.70	11.47	11.22	10.89	10.63
12.5	-1.890987	11.70229	0.076137	13.50	13.04	12.53	12.20	11.93	11.70	11.48	11.26	11.02	10.70	10.46
13.0	-1.951281	11.48191	0.074565	13.21	12.76	12.28	11.96	11.71	11.48	11.27	11.06	10.82	10.52	10.29
13.5	-2.016465	11.27221	0.073103	12.94	12.51	12.04	11.73	11.49	11.27	11.07	10.86	10.64	10.34	10.12
14.0	-2.086542	11.07649	0.071749	12.68	12.27	11.81	11.52	11.28	11.08	10.88	10.68	10.46	10.18	9.97
14.5	-2.161201	10.89696	0.070502	12.45	12.05	11.61	11.33	11.10	10.90	10.71	10.52	10.31	10.03	9.83

15.0	-2.240161	10.73438	0.069364	12.25	11.85	11.43	11.15	10.93	10.73	10.55	10.37	10.16	9.90	9.70
15.5	-2.323064	10.5899	0.068343	12.06	11.68	11.26	10.99	10.78	10.59	10.41	10.23	10.03	9.78	9.58
16.0	-2.409293	10.46568	0.067447	11.91	11.53	11.12	10.86	10.65	10.47	10.29	10.12	9.92	9.68	9.49
16.5	-2.498181	10.36303	0.066678	11.78	11.41	11.01	10.75	10.54	10.36	10.19	10.02	9.83	9.59	9.41
17.0	-2.589307	10.28097	0.066041	11.68	11.31	10.92	10.66	10.46	10.28	10.11	9.95	9.76	9.52	9.34
17.5	-2.682311	10.21728	0.065542	11.60	11.24	10.85	10.59	10.39	10.22	10.05	9.89	9.70	9.47	9.29
18.0	-2.776909	10.16992	0.065188	11.55	11.18	10.79	10.54	10.34	10.17	10.01	9.84	9.66	9.43	9.26
18.5	-2.87283	10.13681	0.064981	11.52	11.15	10.76	10.51	10.31	10.14	9.98	9.81	9.63	9.41	9.23
19.0	-2.969865	10.11532	0.064914	11.50	11.13	10.74	10.48	10.29	10.12	9.95	9.79	9.62	9.39	9.22
19.5	-3.067899	10.10261	0.064973	11.50	11.12	10.73	10.47	10.27	10.10	9.94	9.78	9.60	9.38	9.21
20.0	-3.166841	10.09588	0.065136	11.51	11.12	10.72	10.47	10.27	10.10	9.93	9.77	9.60	9.37	9.21
20.5	-3.26651	10.093	0.065378	11.52	11.13	10.72	10.47	10.27	10.09	9.93	9.77	9.59	9.37	9.20
21.0	-3.366251	10.0928	0.065679	11.54	11.14	10.73	10.47	10.27	10.09	9.93	9.77	9.59	9.37	9.20
21.5	-3.465346	10.095	0.066014	11.57	11.16	10.74	10.47	10.27	10.10	9.93	9.77	9.59	9.37	9.21
22.0	-3.564358	10.10017	0.066366	11.60	11.18	10.75	10.48	10.28	10.10	9.94	9.77	9.60	9.38	9.21
22.5	-3.663842	10.10757	0.066725	11.63	11.20	10.76	10.49	10.29	10.11	9.94	9.78	9.60	9.38	9.22
23.0	-3.759664	10.11537	0.067074	11.66	11.22	10.78	10.50	10.29	10.12	9.95	9.79	9.61	9.39	9.22

Note: values are in seconds

Table 8. Shuttle run. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	-3.09608	19.63309	0.096261	24.41	22.94	21.55	20.74	20.14	19.63	19.18	18.73	18.26	17.68	17.26
3.5	-3.06130	19.41619	0.095874	24.08	22.65	21.30	20.51	19.91	19.42	18.97	18.53	18.07	17.49	17.07
4.0	-2.95260	18.73962	0.094665	23.09	21.78	20.52	19.77	19.21	18.74	18.31	17.89	17.45	16.89	16.49
4.5	-2.84390	18.07127	0.093460	22.12	20.92	19.75	19.05	18.52	18.07	17.66	17.26	16.83	16.30	15.91
5.0	-2.73521	17.42392	0.092267	21.20	20.10	19.01	18.35	17.85	17.42	17.03	16.65	16.24	15.73	15.35
5.5	-2.62651	16.81084	0.091094	20.34	19.33	18.31	17.69	17.22	16.81	16.44	16.07	15.68	15.18	14.82
6.0	-2.51781	16.24007	0.089950	19.54	18.61	17.66	17.08	16.63	16.24	15.88	15.53	15.15	14.68	14.32
6.5	-2.40912	15.71381	0.088850	18.82	17.95	17.06	16.51	16.08	15.71	15.37	15.04	14.67	14.21	13.86
7.0	-2.30042	15.23351	0.087806	18.16	17.35	16.52	15.99	15.59	15.23	14.91	14.58	14.23	13.78	13.45
7.5	-2.19173	14.80133	0.086834	17.57	16.82	16.03	15.53	15.14	14.80	14.49	14.17	13.83	13.40	13.07
8.0	-2.08303	14.41909	0.085943	17.05	16.34	15.59	15.12	14.74	14.42	14.12	13.81	13.48	13.06	12.74
8.5	-1.97433	14.08619	0.085138	16.60	15.93	15.22	14.76	14.40	14.09	13.79	13.50	13.17	12.76	12.45
9.0	-1.86564	13.798	0.084423	16.20	15.57	14.89	14.45	14.10	13.80	13.51	13.22	12.91	12.50	12.20
9.5	-1.75694	13.55128	0.083803	15.87	15.26	14.61	14.19	13.85	13.55	13.27	12.99	12.68	12.28	11.98
10.0	-1.64824	13.34459	0.083281	15.59	15.01	14.38	13.96	13.63	13.34	13.07	12.79	12.49	12.09	11.79
10.5	-1.53955	13.16935	0.082866	15.35	14.79	14.18	13.78	13.45	13.17	12.90	12.63	12.33	11.94	11.64
11.0	-1.43085	13.01166	0.082563	15.13	14.59	14.00	13.61	13.29	13.01	12.75	12.48	12.18	11.79	11.49
11.5	-1.32215	12.86907	0.082379	14.94	14.42	13.84	13.45	13.14	12.87	12.61	12.34	12.04	11.66	11.36
12.0	-1.21346	12.74717	0.082320	14.78	14.27	13.70	13.33	13.02	12.75	12.49	12.22	11.93	11.54	11.25
12.5	-1.10476	12.64815	0.082382	14.65	14.15	13.59	13.22	12.92	12.65	12.39	12.13	11.83	11.45	11.15
13.0	-0.99606	12.56569	0.082564	14.54	14.05	13.50	13.13	12.83	12.57	12.31	12.04	11.75	11.36	11.06
13.5	-0.88737	12.4913	0.082868	14.44	13.97	13.42	13.06	12.76	12.49	12.23	11.97	11.67	11.29	10.98
14.0	-0.77867	12.41921	0.083295	14.36	13.88	13.35	12.98	12.69	12.42	12.16	11.90	11.60	11.21	10.90
14.5	-0.66997	12.34351	0.083847	14.27	13.80	13.27	12.91	12.61	12.34	12.09	11.82	11.52	11.13	10.82

15.0	-0.56128	12.25796	0.084520	14.17	13.71	13.18	12.82	12.52	12.26	12.00	11.73	11.43	11.03	10.72
15.5	-0.45258	12.15956	0.085312	14.06	13.60	13.08	12.72	12.43	12.16	11.90	11.63	11.33	10.93	10.61
16.0	-0.34388	12.04778	0.086220	13.93	13.48	12.97	12.61	12.31	12.05	11.79	11.52	11.21	10.81	10.49
16.5	-0.23519	11.92507	0.087238	13.80	13.36	12.84	12.49	12.19	11.93	11.67	11.39	11.09	10.68	10.36
17.0	-0.12649	11.79353	0.088358	13.66	13.22	12.71	12.35	12.06	11.79	11.53	11.26	10.95	10.54	10.21
17.5	-0.01779	11.65557	0.089572	13.51	13.08	12.57	12.22	11.92	11.66	11.39	11.12	10.81	10.39	10.06
18.0	0.09090	11.51475	0.090871	13.36	12.93	12.43	12.08	11.78	11.51	11.25	10.98	10.66	10.24	9.91
18.5	0.19960	11.37838	0.092244	13.21	12.79	12.29	11.94	11.65	11.38	11.11	10.84	10.52	10.09	9.75
19.0	0.30829	11.25347	0.093681	13.08	12.66	12.17	11.82	11.52	11.25	10.99	10.71	10.39	9.96	9.61
19.5	0.41699	11.14168	0.095171	12.97	12.55	12.06	11.71	11.41	11.14	10.87	10.59	10.27	9.83	9.48
20.0	0.52569	11.04097	0.096704	12.86	12.45	11.96	11.61	11.31	11.04	10.77	10.49	10.16	9.71	9.35
20.5	0.63438	10.9519	0.098269	12.77	12.36	11.87	11.52	11.23	10.95	10.68	10.39	10.06	9.60	9.23
21.0	0.74308	10.87114	0.099857	12.69	12.29	11.79	11.44	11.15	10.87	10.60	10.31	9.97	9.50	9.12
21.5	0.85178	10.79626	0.101460	12.62	12.21	11.72	11.37	11.07	10.80	10.52	10.22	9.88	9.41	9.02
22.0	0.96047	10.72491	0.103071	12.55	12.15	11.66	11.31	11.01	10.72	10.45	10.15	9.80	9.31	8.91
22.5	1.06917	10.65854	0.104683	12.48	12.08	11.59	11.24	10.94	10.66	10.38	10.07	9.72	9.22	8.81
23.0	1.13004	10.62245	0.105587	12.45	12.05	11.56	11.21	10.91	10.62	10.34	10.03	9.67	9.17	8.75

Note: values are in seconds

Table 9. Ball kicking velocity. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for boys from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.34805	4.50350	0.21574	3.08	3.37	3.73	4.01	4.26	4.50	4.75	5.03	5.37	5.86	6.29
3.5	0.40395	4.92903	0.21334	3.38	3.69	4.09	4.40	4.67	4.93	5.20	5.50	5.86	6.39	6.84
4.0	0.51995	5.81985	0.20834	3.99	4.37	4.84	5.20	5.52	5.82	6.13	6.47	6.88	7.47	7.98
4.5	0.63396	6.72323	0.20335	4.62	5.06	5.61	6.02	6.38	6.72	7.07	7.45	7.91	8.56	9.11
5.0	0.74438	7.63490	0.19838	5.25	5.76	6.39	6.85	7.25	7.63	8.02	8.44	8.94	9.64	10.23
5.5	0.84991	8.54213	0.19344	5.89	6.47	7.17	7.68	8.13	8.54	8.96	9.42	9.95	10.70	11.32
6.0	0.94917	9.42497	0.18855	6.53	7.16	7.94	8.50	8.98	9.42	9.88	10.36	10.93	11.72	12.37
6.5	1.04079	10.26916	0.18372	7.14	7.84	8.68	9.28	9.79	10.27	10.75	11.26	11.85	12.68	13.36
7.0	1.12429	11.05766	0.17899	7.73	8.48	9.38	10.01	10.55	11.06	11.56	12.09	12.71	13.56	14.26
7.5	1.19955	11.78263	0.17442	8.29	9.08	10.03	10.69	11.26	11.78	12.30	12.85	13.49	14.36	15.08
8.0	1.26660	12.45412	0.17003	8.82	9.65	10.64	11.33	11.91	12.45	12.99	13.55	14.20	15.10	15.82
8.5	1.32607	13.08034	0.16586	9.32	10.19	11.21	11.93	12.53	13.08	13.63	14.20	14.87	15.78	16.51
9.0	1.37919	13.65875	0.16196	9.80	10.69	11.74	12.48	13.09	13.66	14.21	14.80	15.48	16.39	17.14
9.5	1.42738	14.19366	0.15837	10.25	11.17	12.24	12.99	13.62	14.19	14.76	15.35	16.04	16.96	17.71
10.0	1.47189	14.70449	0.15513	10.68	11.62	12.72	13.48	14.12	14.70	15.28	15.88	16.57	17.51	18.26
10.5	1.51400	15.21191	0.15224	11.10	12.07	13.19	13.97	14.62	15.21	15.79	16.40	17.10	18.05	18.81
11.0	1.55484	15.72947	0.14969	11.53	12.52	13.67	14.47	15.13	15.73	16.32	16.94	17.65	18.61	19.38
11.5	1.59520	16.27399	0.14747	11.97	12.99	14.17	14.98	15.66	16.27	16.88	17.51	18.23	19.20	19.98
12.0	1.63588	16.85961	0.14555	12.44	13.49	14.71	15.54	16.23	16.86	17.47	18.12	18.85	19.84	20.63
12.5	1.67755	17.49248	0.14388	12.94	14.03	15.28	16.14	16.85	17.49	18.12	18.78	19.53	20.54	21.35
13.0	1.72075	18.16728	0.14239	13.46	14.59	15.89	16.77	17.50	18.17	18.81	19.49	20.26	21.29	22.12
13.5	1.76607	18.86284	0.14101	14.00	15.17	16.51	17.43	18.18	18.86	19.53	20.22	21.01	22.07	22.91
14.0	1.81440	19.54991	0.13967	14.52	15.74	17.13	18.07	18.85	19.55	20.23	20.94	21.75	22.83	23.69
14.5	1.86644	20.20687	0.13834	15.03	16.29	17.72	18.69	19.49	20.21	20.90	21.63	22.45	23.55	24.43

15.0	1.92256	20.83031	0.13695	15.50	16.81	18.29	19.28	20.10	20.83	21.54	22.28	23.12	24.23	25.12
15.5	1.98323	21.41696	0.13549	15.96	17.31	18.82	19.84	20.67	21.42	22.14	22.89	23.74	24.86	25.76
16.0	2.04901	21.95687	0.13393	16.38	17.77	19.32	20.35	21.20	21.96	22.69	23.45	24.30	25.44	26.33
16.5	2.12020	22.44252	0.13223	16.76	18.19	19.77	20.82	21.68	22.44	23.18	23.94	24.80	25.94	26.84
17.0	2.19672	22.87579	0.13041	17.12	18.57	20.18	21.24	22.10	22.88	23.62	24.38	25.24	26.38	27.27
17.5	2.27820	23.26703	0.12846	17.44	18.93	20.55	21.63	22.49	23.27	24.01	24.77	25.63	26.76	27.65
18.0	2.36427	23.62364	0.12637	17.75	19.26	20.90	21.98	22.85	23.62	24.36	25.12	25.97	27.10	27.98
18.5	2.45442	23.94916	0.12416	18.04	19.57	21.23	22.31	23.18	23.95	24.69	25.44	26.28	27.39	28.26
19.0	2.54781	24.24795	0.12182	18.32	19.87	21.53	22.61	23.48	24.25	24.98	25.73	26.56	27.66	28.51
19.5	2.64346	24.52162	0.11938	18.59	20.15	21.82	22.90	23.76	24.52	25.25	25.98	26.81	27.88	28.72
20.0	2.74063	24.76954	0.11684	18.85	20.43	22.09	23.16	24.02	24.77	25.48	26.21	27.02	28.08	28.90
20.5	2.83888	24.99335	0.11423	19.11	20.68	22.34	23.41	24.25	24.99	25.70	26.42	27.21	28.25	29.06
21.0	2.93777	25.19814	0.11156	19.36	20.93	22.58	23.63	24.47	25.20	25.89	26.60	27.38	28.39	29.18
21.5	3.03687	25.38565	0.10885	19.60	21.17	22.80	23.84	24.67	25.39	26.07	26.76	27.52	28.52	29.29
22.0	3.13603	25.55919	0.10611	19.85	21.41	23.02	24.04	24.85	25.56	26.23	26.90	27.65	28.63	29.38
22.5	3.23515	25.72424	0.10335	20.10	21.64	23.23	24.24	25.03	25.72	26.38	27.04	27.77	28.72	29.46
23.0	3.33028	25.88070	0.10070	20.34	21.86	23.43	24.42	25.20	25.88	26.52	27.17	27.89	28.81	29.53

Note: values are in m/s

Table 10. Ball kicking velocity. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.34407	3.86413	0.23379	2.56	2.82	3.15	3.41	3.64	3.86	4.10	4.36	4.67	5.14	5.55
3.5	0.34407	4.06776	0.23239	2.70	2.97	3.32	3.59	3.83	4.07	4.31	4.58	4.92	5.40	5.83
4.0	0.34407	4.70420	0.22804	3.15	3.46	3.86	4.16	4.44	4.70	4.98	5.29	5.66	6.22	6.69
4.5	0.34407	5.34121	0.22369	3.60	3.95	4.40	4.74	5.04	5.34	5.65	5.99	6.41	7.02	7.55
5.0	0.34407	5.97917	0.21935	4.07	4.45	4.94	5.32	5.65	5.98	6.32	6.69	7.15	7.82	8.40
5.5	0.34407	6.61743	0.21502	4.54	4.95	5.49	5.90	6.26	6.62	6.98	7.39	7.89	8.61	9.24
6.0	0.34407	7.25440	0.21070	5.02	5.46	6.04	6.48	6.87	7.25	7.65	8.09	8.62	9.39	10.06
6.5	0.34407	7.88678	0.20639	5.50	5.98	6.59	7.06	7.48	7.89	8.31	8.77	9.34	10.16	10.87
7.0	0.34407	8.50941	0.20209	5.98	6.49	7.14	7.64	8.08	8.51	8.95	9.44	10.04	10.91	11.66
7.5	0.34407	9.11732	0.19784	6.46	6.99	7.68	8.20	8.67	9.12	9.58	10.10	10.72	11.63	12.41
8.0	0.34407	9.70648	0.19365	6.93	7.49	8.21	8.75	9.24	9.71	10.19	10.73	11.37	12.32	13.13
8.5	0.34407	10.27241	0.18956	7.39	7.97	8.72	9.28	9.79	10.27	10.77	11.33	12.00	12.97	13.81
9.0	0.34407	10.81017	0.18561	7.83	8.43	9.21	9.79	10.31	10.81	11.33	11.90	12.59	13.59	14.45
9.5	0.34407	11.31598	0.18188	8.25	8.87	9.67	10.27	10.80	11.32	11.85	12.43	13.14	14.16	15.04
10.0	0.34407	11.78645	0.17842	8.65	9.29	10.10	10.72	11.26	11.79	12.33	12.92	13.64	14.69	15.59
10.5	0.34407	12.21960	0.17528	9.02	9.67	10.50	11.13	11.68	12.22	12.77	13.38	14.11	15.17	16.09
11.0	0.34407	12.61454	0.17252	9.36	10.02	10.87	11.51	12.07	12.61	13.17	13.79	14.53	15.61	16.54
11.5	0.34407	12.97149	0.17018	9.66	10.34	11.20	11.85	12.42	12.97	13.54	14.16	14.92	16.01	16.95
12.0	0.34407	13.29169	0.16832	9.94	10.62	11.49	12.15	12.73	13.29	13.87	14.50	15.26	16.37	17.32
12.5	0.34407	13.57824	0.16696	10.18	10.87	11.76	12.42	13.01	13.58	14.16	14.80	15.58	16.69	17.65
13.0	0.34407	13.83523	0.16609	10.38	11.09	11.99	12.66	13.26	13.84	14.43	15.07	15.86	16.99	17.96
13.5	0.34407	14.06722	0.16570	10.57	11.28	12.19	12.88	13.48	14.07	14.67	15.32	16.12	17.27	18.25
14.0	0.34407	14.27888	0.16575	10.72	11.45	12.38	13.07	13.69	14.28	14.89	15.56	16.36	17.53	18.53
14.5	0.34407	14.47456	0.16615	10.86	11.60	12.54	13.25	13.87	14.47	15.09	15.77	16.59	17.78	18.80

15.0	0.34407	14.65745	0.16687	10.99	11.74	12.69	13.41	14.05	14.66	15.29	15.98	16.81	18.02	19.05
15.5	0.34407	14.83051	0.16782	11.10	11.86	12.83	13.56	14.21	14.83	15.47	16.17	17.02	18.25	19.31
16.0	0.34407	14.99670	0.16896	11.20	11.97	12.96	13.71	14.36	15.00	15.65	16.36	17.23	18.48	19.56
16.5	0.34407	15.15660	0.17023	11.29	12.08	13.09	13.84	14.51	15.16	15.82	16.55	17.43	18.71	19.80
17.0	0.34407	15.30960	0.17160	11.38	12.18	13.20	13.97	14.65	15.31	15.98	16.73	17.63	18.93	20.04
17.5	0.34407	15.45526	0.17307	11.45	12.27	13.31	14.09	14.79	15.46	16.14	16.90	17.82	19.14	20.28
18.0	0.34407	15.59312	0.17459	11.52	12.35	13.41	14.21	14.91	15.59	16.29	17.06	18.00	19.35	20.51
18.5	0.34407	15.72243	0.17614	11.59	12.43	13.50	14.31	15.03	15.72	16.43	17.22	18.17	19.54	20.72
19.0	0.34407	15.84265	0.17769	11.64	12.50	13.59	14.41	15.14	15.84	16.57	17.36	18.33	19.73	20.93
19.5	0.34407	15.95393	0.17925	11.69	12.56	13.66	14.50	15.24	15.95	16.69	17.50	18.48	19.90	21.13
20.0	0.34407	16.05662	0.18079	11.73	12.61	13.73	14.58	15.33	16.06	16.80	17.63	18.62	20.07	21.31
20.5	0.34407	16.15177	0.18231	11.77	12.66	13.80	14.66	15.42	16.15	16.91	17.74	18.76	20.22	21.49
21.0	0.34407	16.24138	0.18382	11.80	12.70	13.85	14.72	15.50	16.24	17.01	17.86	18.88	20.37	21.65
21.5	0.34407	16.32792	0.18531	11.83	12.74	13.91	14.79	15.57	16.33	17.11	17.97	19.01	20.52	21.82
22.0	0.34407	16.41293	0.18680	11.86	12.78	13.96	14.86	15.65	16.41	17.20	18.07	19.13	20.66	21.98
22.5	0.34407	16.49755	0.18828	11.89	12.82	14.02	14.92	15.72	16.50	17.30	18.18	19.25	20.80	22.14
23.0	0.34407	16.54491	0.18912	11.91	12.84	14.05	14.96	15.76	16.54	17.35	18.24	19.32	20.88	22.23

Note: values are in m/s

Table 11. Ball throwing velocity. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for boys from 3 to 23 years of age.

Age	L	M	S	p5	p10	p25	p30	p40	p50	p60	p70	p80	p90	p95
3.0	0.42869	5.98954	0.16740	4.47	4.78	5.33	5.48	5.74	5.99	6.25	6.53	6.87	7.35	7.77
3.5	0.43377	6.29184	0.16806	4.69	5.02	5.60	5.75	6.03	6.29	6.56	6.86	7.22	7.73	8.17
4.0	0.44418	6.92678	0.16945	5.14	5.51	6.16	6.33	6.63	6.93	7.23	7.56	7.95	8.52	9.01
4.5	0.45382	7.57208	0.17088	5.61	6.01	6.73	6.91	7.25	7.57	7.90	8.27	8.70	9.33	9.87
5.0	0.46214	8.21724	0.17232	6.06	6.51	7.29	7.49	7.86	8.22	8.58	8.98	9.46	10.14	10.73
5.5	0.46876	8.84903	0.17365	6.51	7.00	7.84	8.06	8.46	8.85	9.24	9.67	10.19	10.94	11.57
6.0	0.47358	9.45478	0.17486	6.94	7.46	8.37	8.61	9.04	9.45	9.88	10.34	10.90	11.70	12.38
6.5	0.47685	10.02856	0.17598	7.34	7.90	8.88	9.13	9.59	10.03	10.48	10.98	11.57	12.43	13.15
7.0	0.47902	10.56779	0.17703	7.72	8.31	9.35	9.61	10.10	10.57	11.05	11.57	12.20	13.11	13.88
7.5	0.48041	11.08150	0.17803	8.08	8.70	9.79	10.07	10.59	11.08	11.59	12.14	12.81	13.76	14.57
8.0	0.48132	11.58552	0.17903	8.43	9.08	10.23	10.52	11.07	11.59	12.12	12.70	13.40	14.40	15.26
8.5	0.48202	12.07974	0.18007	8.78	9.46	10.66	10.97	11.54	12.08	12.64	13.25	13.98	15.04	15.93
9.0	0.48261	12.55331	0.18117	9.10	9.81	11.07	11.39	11.98	12.55	13.14	13.78	14.54	15.64	16.58
9.5	0.48319	13.00148	0.18234	9.40	10.15	11.45	11.79	12.41	13.00	13.61	14.28	15.08	16.22	17.20
10.0	0.48364	13.42994	0.18356	9.69	10.46	11.82	12.17	12.81	13.43	14.06	14.75	15.59	16.78	17.80
10.5	0.48413	13.84469	0.18485	9.96	10.76	12.17	12.54	13.20	13.84	14.50	15.22	16.09	17.33	18.39
11.0	0.48534	14.25048	0.18617	10.23	11.06	12.52	12.89	13.59	14.25	14.93	15.68	16.57	17.86	18.96
11.5	0.48810	14.65205	0.18753	10.49	11.35	12.86	13.25	13.96	14.65	15.36	16.13	17.06	18.39	19.53
12.0	0.49338	15.05570	0.18889	10.75	11.63	13.20	13.60	14.34	15.06	15.78	16.58	17.55	18.93	20.10
12.5	0.50246	15.47263	0.19013	11.01	11.93	13.55	13.97	14.74	15.47	16.23	17.05	18.05	19.47	20.69
13.0	0.51700	15.91476	0.19107	11.29	12.25	13.93	14.36	15.15	15.91	16.69	17.55	18.57	20.04	21.30
13.5	0.53900	16.38751	0.19140	11.61	12.60	14.34	14.78	15.60	16.39	17.19	18.07	19.12	20.63	21.92
14.0	0.57014	16.88734	0.19077	11.95	12.98	14.77	15.23	16.08	16.89	17.71	18.61	19.69	21.23	22.54
14.5	0.61123	17.41304	0.18895	12.34	13.40	15.25	15.72	16.59	17.41	18.25	19.17	20.27	21.83	23.15

15.0	0.66206	17.96370	0.18592	12.76	13.86	15.76	16.24	17.12	17.96	18.82	19.74	20.85	22.41	23.73
15.5	0.72173	18.52735	0.18182	13.23	14.35	16.29	16.78	17.68	18.53	19.39	20.32	21.42	22.98	24.29
16.0	0.78858	19.08488	0.17696	13.71	14.86	16.84	17.33	18.23	19.08	19.94	20.87	21.97	23.51	24.80
16.5	0.86052	19.62024	0.17164	14.20	15.37	17.37	17.87	18.77	19.62	20.48	21.40	22.48	24.00	25.26
17.0	0.93572	20.13025	0.16616	14.68	15.87	17.88	18.38	19.28	20.13	20.98	21.89	22.96	24.45	25.68
17.5	1.01293	20.61970	0.16073	15.16	16.36	18.38	18.88	19.78	20.62	21.46	22.36	23.41	24.86	26.06
18.0	1.09119	21.09434	0.15553	15.63	16.85	18.87	19.37	20.26	21.09	21.92	22.81	23.84	25.26	26.43
18.5	1.16952	21.55845	0.15067	16.09	17.32	19.35	19.84	20.73	21.56	22.38	23.25	24.26	25.66	26.80
19.0	1.24715	22.01698	0.14615	16.54	17.79	19.82	20.31	21.20	22.02	22.83	23.69	24.69	26.05	27.17
19.5	1.32340	22.47276	0.14198	17.00	18.25	20.29	20.78	21.66	22.47	23.28	24.13	25.11	26.45	27.54
20.0	1.39783	22.92590	0.13810	17.44	18.71	20.75	21.24	22.12	22.93	23.72	24.56	25.53	26.86	27.93
20.5	1.47061	23.37835	0.13443	17.89	19.16	21.21	21.70	22.58	23.38	24.17	25.00	25.96	27.26	28.31
21.0	1.54233	23.83209	0.13088	18.35	19.63	21.67	22.16	23.03	23.83	24.62	25.44	26.38	27.67	28.70
21.5	1.61322	24.28512	0.12739	18.80	20.09	22.14	22.63	23.49	24.29	25.06	25.88	26.81	28.07	29.09
22.0	1.68359	24.73550	0.12388	19.27	20.56	22.61	23.09	23.95	24.74	25.50	26.31	27.23	28.47	29.47
22.5	1.75376	25.18441	0.12035	19.75	21.04	23.07	23.56	24.41	25.18	25.94	26.74	27.65	28.87	29.85
23.0	1.82104	25.61474	0.11695	20.21	21.50	23.52	24.00	24.85	25.61	26.36	27.15	28.04	29.25	30.21

Note: values are in m/s

Table 12. Ball throwing velocity. Smoothed and weighted age- and sex-specific percentile values (p05, p10, p20, p30, p40, p50, p60, p70, p80, p90, and p95), and LMS values for girls from 3 to 23 years of age.

Age	L	M	S	p5	p10	p20	p30	p40	p50	p60	p70	p80	p90	p95
3.0	1.19853	5.81162	0.20612	3.76	4.23	4.78	5.18	5.51	5.81	6.11	6.43	6.80	7.31	7.72
3.5	1.18264	5.94043	0.20481	3.87	4.34	4.90	5.30	5.63	5.94	6.25	6.57	6.95	7.47	7.89
4.0	1.13298	6.34494	0.20072	4.20	4.68	5.26	5.67	6.02	6.34	6.67	7.01	7.41	7.95	8.40
4.5	1.08332	6.75413	0.19669	4.53	5.03	5.63	6.05	6.42	6.75	7.09	7.45	7.86	8.44	8.91
5.0	1.03366	7.16493	0.19278	4.88	5.39	6.00	6.44	6.81	7.16	7.51	7.89	8.32	8.93	9.43
5.5	0.98400	7.57356	0.18903	5.23	5.74	6.37	6.82	7.21	7.57	7.94	8.32	8.78	9.41	9.93
6.0	0.93433	7.97726	0.18545	5.57	6.10	6.74	7.20	7.60	7.98	8.35	8.76	9.23	9.89	10.43
6.5	0.88467	8.37503	0.18200	5.91	6.45	7.10	7.58	7.99	8.38	8.76	9.18	9.67	10.35	10.92
7.0	0.83501	8.76608	0.17857	6.26	6.80	7.47	7.95	8.37	8.77	9.16	9.59	10.10	10.81	11.40
7.5	0.78535	9.14872	0.17505	6.60	7.15	7.82	8.32	8.74	9.15	9.56	10.00	10.52	11.25	11.86
8.0	0.73569	9.52466	0.17131	6.95	7.50	8.18	8.68	9.11	9.52	9.94	10.39	10.92	11.68	12.30
8.5	0.68603	9.89783	0.16738	7.29	7.85	8.53	9.04	9.48	9.90	10.32	10.78	11.32	12.09	12.74
9.0	0.63637	10.25907	0.16344	7.64	8.19	8.88	9.39	9.84	10.26	10.69	11.15	11.71	12.49	13.15
9.5	0.58671	10.60207	0.15972	7.97	8.52	9.22	9.73	10.18	10.60	11.03	11.51	12.07	12.86	13.54
10.0	0.53705	10.92655	0.15636	8.28	8.84	9.53	10.05	10.50	10.93	11.36	11.84	12.41	13.22	13.90
10.5	0.48739	11.22727	0.15338	8.58	9.13	9.83	10.34	10.80	11.23	11.67	12.15	12.72	13.55	14.24
11.0	0.43773	11.49527	0.15068	8.84	9.39	10.09	10.61	11.06	11.50	11.94	12.42	13.01	13.84	14.55
11.5	0.38807	11.72667	0.14821	9.08	9.63	10.32	10.84	11.29	11.73	12.17	12.66	13.25	14.09	14.80
12.0	0.33841	11.92301	0.14598	9.28	9.83	10.52	11.03	11.49	11.92	12.37	12.86	13.45	14.30	15.02
12.5	0.28875	12.08692	0.14416	9.45	10.00	10.68	11.20	11.65	12.09	12.53	13.03	13.62	14.47	15.20
13.0	0.23909	12.22102	0.14295	9.59	10.13	10.82	11.33	11.78	12.22	12.67	13.16	13.76	14.62	15.36
13.5	0.18943	12.33175	0.14258	9.70	10.24	10.92	11.44	11.89	12.33	12.78	13.28	13.89	14.76	15.51
14.0	0.13977	12.43206	0.14320	9.78	10.32	11.01	11.53	11.99	12.43	12.89	13.40	14.01	14.90	15.67
14.5	0.09011	12.53398	0.14489	9.85	10.39	11.09	11.61	12.08	12.53	13.00	13.52	14.15	15.07	15.87

15.0	0.04045	12.64559	0.14757	9.91	10.46	11.17	11.70	12.18	12.65	13.13	13.66	14.31	15.27	16.10
15.5	-0.00921	12.77458	0.15105	9.97	10.53	11.25	11.80	12.30	12.77	13.27	13.83	14.51	15.51	16.38
16.0	-0.05887	12.92443	0.15504	10.03	10.61	11.35	11.92	12.43	12.92	13.44	14.02	14.73	15.78	16.71
16.5	-0.10853	13.09245	0.15932	10.11	10.70	11.46	12.05	12.58	13.09	13.63	14.24	14.99	16.10	17.08
17.0	-0.15819	13.27305	0.16381	10.19	10.80	11.58	12.19	12.74	13.27	13.84	14.47	15.26	16.43	17.48
17.5	-0.20786	13.46046	0.16847	10.28	10.90	11.71	12.33	12.90	13.46	14.05	14.72	15.54	16.79	17.91
18.0	-0.25752	13.64833	0.17321	10.37	11.00	11.83	12.48	13.07	13.65	14.26	14.96	15.83	17.15	18.35
18.5	-0.30718	13.83033	0.17793	10.45	11.09	11.95	12.61	13.22	13.83	14.47	15.20	16.12	17.52	18.79
19.0	-0.35684	14.00085	0.18261	10.53	11.18	12.06	12.74	13.37	14.00	14.67	15.43	16.40	17.88	19.24
19.5	-0.40650	14.15434	0.18729	10.59	11.26	12.15	12.85	13.50	14.15	14.85	15.65	16.66	18.22	19.67
20.0	-0.45616	14.28667	0.19197	10.64	11.31	12.22	12.95	13.62	14.29	15.01	15.84	16.90	18.55	20.09
20.5	-0.50582	14.39823	0.19664	10.67	11.36	12.28	13.02	13.71	14.40	15.14	16.01	17.11	18.86	20.50
21.0	-0.55548	14.49626	0.20131	10.70	11.39	12.33	13.08	13.79	14.50	15.27	16.16	17.32	19.15	20.90
21.5	-0.60514	14.58971	0.20596	10.72	11.42	12.37	13.14	13.86	14.59	15.38	16.31	17.52	19.45	21.32
22.0	-0.65480	14.68216	0.21063	10.74	11.45	12.42	13.20	13.93	14.68	15.50	16.47	17.73	19.76	21.75
22.5	-0.70446	14.77574	0.21531	10.77	11.48	12.46	13.25	14.01	14.78	15.62	16.62	17.94	20.08	22.21
23.0	-0.73227	14.82851	0.21794	10.79	11.50	12.48	13.29	14.05	14.83	15.69	16.71	18.06	20.27	22.48

Note: values are in m/s